FINAL
ENVIRONMENTAL ASSESSMENT

CREEK BED AND LOWER ROAD REPAIRS AT THE EASTERN REGIONAL RESEARCH CENTER (ERRC) WYNDMOOR, PA

PREPARED BY

STV INCORPORATED

STV Project No. 30-19705

February 8, 2019

TABLE OF CONTENTS

SECTION 1.0 INTRODUCTION **2**

1.1 GENERAL 2
1.2 DESCRIPTION OF THE PROJECT AREA 3
1.3 PURPOSE OF AND NEED FOR PROPOSED ACTION 3
1.4 PROCEDURAL REQUIREMENTS 3
1.5 POTENTIALLY SIGNIFICANT ISSUES 4
1.5.1 Surface Waters *5*
1.5.2 Soils *5*
1.5.3 Utilities *5*
1.6 POTENTIAL PERMITS AND APPROVALS 5
1.6.1 Stormwater Management Permits *5*
1.6.2 Water Obstruction Permit *6*
1.7 OTHER CHAPTERS OF THIS ENVIRONMENTAL ASSESSMENT 6

SECTION 2.0 ALTERNATIVES CONSIDERED INCLUDING THE PROPOSED ACTION **7**

2.1 STREAM RESTORATION 7
2.1.1 Build Alternative *7*
2.1.2 No Build Alternative *7*
2.2 ROAD IMPROVEMENTS 8
2.2.1 Build Alternative *8*
2.2.2 No Build Alternative *8*
2.3 WALKING PATH 8
2.3.1 Build Alternative *8*
2.3.2 No Build Alternative *8*

SECTION 3.0 EXISTING ENVIRONMENTAL CONDITIONS **9**

3.1 LAND RESOURCES 9
3.1.1 Geology *9*
3.1.2 Soils *9*
3.1.3 Topography *10*
3.2 WATER RESOURCES 10
3.2.1 Surface Waters *10*
3.2.2 Wetlands *10*
3.2.3 Floodplains *10*
3.2.4 Groundwater *10*
3.3 BIOLOGICAL RESOURCES 10
3.3.1 Vegetation *11*
3.3.2 Wildlife *11*
3.3.3 Rare, Threatened and Endangered Species *11*
3.4 CULTURAL RESOURCES 12
3.5 AIR QUALITY 12
3.6 NOISE 12
3.7 INFRASTRUCTURE 12
3.7.1 Utilities *12*
3.7.2 Transportation and Parking *13*
3.8 HAZARDOUS MATERIALS/WASTE AND SOLID WASTE 13
3.8.1 Hazardous Materials/Waste *13*
3.8.2 Solid Waste *13*
3.9 RECREATION 14
3.10 ENVIRONMENTAL JUSTICE 14

SECTION 4.0 ENVIRONMENTAL CONSEQUENCES **15**

4.1 STREAM RESTORATION 15
4.1.1 Build Alternative *15*
4.1.2 No Build Alternative *16*
4.2 ROAD IMPROVEMENTS 17
4.2.1 Build Alternative *17*
4.2.2 No Build Alternative *18*
4.3 WALKING PATH 18
4.3.1 Build Alternative *18*
4.3.2 No Build Alternative *19*

SECTION 5.0 UNAVOIDABLE ADVERSE IMPACTS 20

SECTION 6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES 21

SECTION 7.0 CUMULATIVE EFFECTS 22

SECTION 8.0 LIST OF PREPARERS & REVIEWERS 23

SECTION 9.0 REFERENCES 24

TABLE OF CONTENTS (CONTINUED)

TABLES

Table 1 – Document Summary
Table 2 – Project Area Soils
Table 3 – Construction Suitability Chart
Table 4 – Potential Species of Concern

FIGURES

Figure 1 – Project Location Map (USGS)
Figure 2 – Project Location Map (Aerial)
Figure 3 – Site Plan
Figure 4 – NRCS Soils Map
Figure 5 – USFWS National Wetlands Inventory Map
Figure 6 – FEMA Floodplain Map
Figure 7 – Utility Map

APPENDICES

Appendix A – Agency Coordination Letters
Appendix B – Wetland Delineation Report
Appendix C – Photograph Log
Appendix D – Finding of No Significant Impact

Glossary of Acronyms and Abbreviations Used in this EA

APE	Area of Potential Effect
ARS	Agricultural Research Service
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DCNR	Department of Conservation and Natural Resources
DHS	Department of Homeland Security
EA	Environmental Assessment
EBSC	Eastern Business Service Center
EIS	Environmental Impact Statement
EO	Executive Order
ERRC	Eastern Regional Research Center
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
MCCD	Montgomery County Conservation District
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
PADEP	Pennsylvania Department of Environmental Protection
PGC	Pennsylvania Game Commission
PFBC	Pennsylvania Fish and Boat Commission
PHMC	Pennsylvania Historical and Museum Commission
PNDI	Pennsylvania Natural Diversity Inventory
SHPO	State Historic Preservation Office
STV	STV Incorporated
T&E	Threatened and Endangered
TSF	Trout Stocked Fishery
USACE	United Stated Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

COVER SHEET

Proposed Action: Creek Bed and Lower Road Repairs
United States Department of Agriculture, Agricultural Research Service
Eastern Regional Research Center
Wyndmoor, Pennsylvania

Type of Statement: **NEPA Environmental Assessment**

Lead Agency: United States Department of Agriculture

Consulting Agencies: Federal:
Department of the Interior, U.S. Fish and Wildlife Service
Non-Federal:
Pennsylvania Historical and Museum Commission
Pennsylvania Fish and Boat Commission
Pennsylvania Game Commission
Pennsylvania Department of Conservation and Natural Resources

Abstract:

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Eastern Business Service Center (EBSC) is proposing to conduct road repairs and creek stabilization at their Eastern Regional Research Center (ERRC) in Wyndmoor, Pennsylvania. The ERRC is a laboratory research center tasked with developing new knowledge and technology to improve agricultural commodities.

This National Environmental Policy Act (NEPA) Environmental Assessment (EA) has been prepared for the USDA to document the proposed actions at the ERRC. The end result of this project will not adversely affect physical, environmental, social, or economical resources. Road renovation and creek stabilization activities are expected to have a positive impact to the environment of the project area and that of the surrounding lands.

The proposed actions and the potential impacts associated are fully assessed in this EA which is prepared pursuant to NEPA standards. Based on the absence of significant impacts to the project area and to the surrounding lands, a recommendation will be made to the USDA Area Director that a Finding of No Significant Impact (FONSI) be rendered for this project. Further, implementation of the mitigation measures previously identified will reduce the potential impacts resulting in no significant impacts to the environment.

SECTION 1.0
INTRODUCTION

1.1 GENERAL

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Eastern Business Service Center (EBSC) is proposing to conduct road repairs and creek stabilization at their Eastern Regional Research Center (ERRC) in Wyndmoor, Springfield Township, Montgomery County, Pennsylvania (see Figures 1 and 2). The ERRC is a laboratory research center, established by an Act of Congress in 1938. The ERRC is home to the Nation's leading scientists and engineers in agriculture, solving problems facing the U.S. today and tomorrow with fundamental, applied, and developmental research on agricultural commodities including milk, meat, poultry, hides, leather, wool, fats, oils, rendered protein, grains, fruits, vegetables, energy crops, and juices.

The ERRC is tasked with developing new knowledge and technology that will ensure an abundance of high quality agricultural commodities and products at reasonable prices to meet the increasing needs and to provide a continued improvement in the standard of living of all Americans through the following research objectives:

- Development of rapid methods to detect human pathogens and harmful chemicals in foods.
- Development of novel methods to characterize human pathogens in foods.
- Development of microbial predictive modeling for food safety risk assessment and management.
- Development of effective and innovative intervention technologies to reduce or eliminate human pathogens in foods.
- Sustainable production of biofuels and co-products from grains and biomass.
- Sustainable agricultural practices.
- Development of new crop-derived food ingredients and nutraceuticals with health-promoting ability.
- Development of new food and dairy products with improved functionality and health benefits.
- Development of valuable biobased products from agricultural byproducts for biomedical, industrial, and commercial applications.
- Utilize by-products, particularly potential pollutants.
- Open new and expand existing domestic and foreign markets.

This National Environmental Policy Act (NEPA) Environmental Assessment (EA) has been prepared for the USDA to document proposed actions to ensure consideration of the environmental aspects of the proposed actions in the Federal decision making processes; determine whether or not the proposed actions have the potential for creating significant impacts on the human and/or natural environment; and to make environmental information available to the public before decisions are made and actions taken.

1.2 DESCRIPTION OF THE PROJECT AREA

The ERRC campus was established in 1938, with the construction of the facility being completed in the early 1940s. There are currently between 175-200 employees working at the ERRC. The campus consists of the main laboratory building, and several out buildings, including a vehicle storage building, hazardous operations building, leather research building, meat processing laboratory, service building, mechanical service building and the transformer/meter house (see Figure 3). Parking lots 1, 2, and 3 are located east of the main laboratory building, and parking lot 5 is located to the south. Internal connector roads connect the parking lots to the main laboratory and out buildings. Cresheim Creek, located at the northeast corner of the intersection of East Lane and Mermaid Lane, runs through and along the southeast edge of the ERRC property.

1.3 PURPOSE OF AND NEED FOR PROPOSED ACTION

In 2013, STV performed a preliminary investigation on behalf of the ERRC of a section of Cresheim Creek running from the culvert at Mermaid Lane to East Lane. At the time of the preliminary investigations performed by STV, the team found evidence of accelerated stream bank erosion occurring along the banks of the creek. Other observations noted were debris/large obstructions located within the creek bed, including tires, fallen trees and large rock boulders, steep slopes along the creek bank with no vegetation, exposed tree roots along the banks, lack of outfall protective measures for storm sewer pipes discharging to the creek, lack of riparian buffers along sections of the creek, toe erosion, undercutting and vertical banks. Stream surveys conducted in November 2018 indicated that conditions of the creek have continued to deteriorate due to further urbanization and more intense storms and runoff events.

In addition to restoration of the creek, sections of the Lower Road driveways and paved surfaces, located along the southeastern border of the property also require repairs. Also, based on informal discussions USDA has had with the Philadelphia Water Department and Friends of the Wissahickon, a non-profit organization, it is desired by USDA to incorporate a walkable path for public use along the outside of the ERRC fence line.

1.4 PROCEDURAL REQUIREMENTS

This EA was prepared in accordance with NEPA, Section 102(2)(C) and the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA*; 40 Code of Federal Regulation (CFR), Parts 1500 through 1508. The objective of this EA is to determine whether the proposed actions have the potential for creating significant impacts on the human and/or natural environment, which would thereby warrant a more detailed study of possible impacts, mitigation, and alternate courses of action. If no potentially

significant impacts are identified from the Proposed Actions, a Finding of No Significant Impact (FONSI) can be issued. If significant impacts are deemed probable (in accordance with CEQ criteria (40 CFR 1508.27)), even after mitigation measures are incorporated into the design, a Notice of Intent (NOI) to prepare a NEPA Environmental Impact Statement (EIS) is required, followed by the completion of the EIS itself.

Background data review and on-site investigations conducted as part of this EA included the following activities:

- Review of United States Geological Service (USGS) Topographic Map; Germantown, PA Quadrangles (2015) to identify general area setting;

- Review of Natural Resource Conservation Service (NRCS), Montgomery County, PA Soil Survey Maps for the project area to identify soils characteristics;

- Review of Federal Emergency Management Agency (FEMA) maps for the project area to determine the extent of flood boundaries;

- Review of U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online mappers for the project area to assist in the identification of jurisdictional wetland areas;

- Completion of an on-line Pennsylvania Natural Diversity Inventory (PNDI) to ascertain the presence or absence of Rare, Threatened, or Endangered Species (Appendix A);

- Completion of field inspections of the project area to document the presence or absence of environmentally sensitive features, wetlands, threatened and endangered plant and wildlife species;

- Review of the Wetland Delineation Report prepared by Cedarville Engineering Group, LLC (Appendix B).

1.5 POTENTIALLY SIGNIFICANT ISSUES

Scoping covers the range and detail of issues covered in this EA document. Scoping was conducted as part of the original NEPA process to ensure that identification of issues of concern (i.e., potentially significant impacts) occurred as early in the assessment process as possible. The following activities were conducted to define and refine the scope of this EA:

- Evaluation of existing/current site conditions and natural resources and the human environment within and adjacent to the subject property area.

- Correspondence and request for agency review from state, and federal regulatory agencies to obtain information pertaining to critical resources (e.g, threatened and endangered species) and environmental permits required for land development activities within the project area.

In accordance with CEQ regulations (specifically sections 1500.4 and 1501.7), this EA includes detailed discussions of only those issues deemed to be potentially significant. Potential issues involved with the project are as follows:

1.5.1 Surface Waters

Direct impacts to surface waters would be avoided with the use of Best Management Practices (BMPs) and an Erosion & Sedimentation (E&S) Control plan to avoid sedimentation from entering Cresheim Creek during construction activities. Additionally, the Build Alternative would result in a positive impact to the portion of Cresheim Creek being stabilized, as well as downstream surface waters.

1.5.2 Soils

Earthwork and other related construction activities would involve temporary impacts to site soils. During site construction activities, stormwater management and E&S control measures would be implemented and adhered to in accordance with Pennsylvania Department of Environmental Protection (PADEP) and Montgomery County Conservation District (MCCD) requirements. Through appropriate measures and the installation of Best Management Practices BMPs, off site wetlands and streams would be protected from inadvertent sediment runoff during construction activities.

1.5.3 Utilities

Underground utilities are located throughout the ERRC facility. During excavation activities, contact with other subsurface utilities (e.g, electrical, natural gas, sewer, etc.) that are found in the facility must be avoided. The contractor should take great care to avoid inadvertent contact with any other subsurface utilities during construction.

1.6 POTENTIAL PERMITS AND APPROVALS

In the development of this EA, potential environmental permits and approvals applicable to the Proposed Action were identified. Summarized below are those permits required for the construction of the proposed project.

1.6.1 Stormwater Management Permits

Federal Requirements

Section 438 of the Energy Independence and Security Act requires any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

State Requirements

Pursuant to the federal Clean Water Act, a National Pollution Discharge Elimination System (NPDES), permit is required from the PADEP for projects causing a ground disturbance of an acre or more of land, in order to limit the negative impacts of construction projects on Pennsylvania waters. It is anticipated that project impacts will be greater than one acre, and therefore, PADEP would require an Individual NPDES permit for this project.

1.6.2 Water Obstruction Permit

The project will require a Chapter 105/Section 404 Joint Permit from PADEP and the U.S. Army Corps of Engineers (USACE) for impacts to Cresheim Creek and the associated floodway.

1.7 OTHER CHAPTERS OF THIS ENVIRONMENTAL ASSESSMENT

The following table identifies the organization of this EA:

TABLE 1
DOCUMENT SUMMARY

CHAPTER	TOPIC
2	Alternatives Considered, Including the Proposed Action
3	Existing Environmental Conditions
4	Environmental Consequences
5	Unavoidable Adverse Impacts
6	Irreversible and Irretrievable Commitments of Resources
7	Cumulative Effects
8	List of Preparers
9	References
Appendices	

Chapter 2 presents the two practical alternatives including the Preferred Alternative. Chapter 3 describes the existing environmental conditions potentially affected by the proposed construction. Chapter 4 details the impacts on each specific environmental condition or media for the build and no build alternatives. Chapters 5 and 6 present unavoidable adverse impacts and weigh the short and long-term impacts. Chapter 7 evaluates the summation of impacts from this and other current and future projects in the vicinity that have an additive impact effect on environmental conditions. The Appendices contain pertinent informational maps, correspondence with regulatory agencies, photographs (Appendix C), and technical reports prepared as part of the assessment process. This study concluded that a FONSI was justified which can be reviewed in Appendix D.

SECTION 2.0
ALTERNATIVES CONSIDERED INCLUDING THE PROPOSED ACTION

NEPA allows the evaluation of only one build alternative for projects that are not complex or controversial. Therefore, this EA evaluates only the Proposed Actions (Build Alternatives) for the stream restoration, the road improvements and the walking path, and the No Build Alternative for each project.

2.1 STREAM RESTORATION

2.1.1 Build Alternative

Under the Build Alternative, the USDA will restore approximately 1,450 LF of streambank along Cresheim Creek. The restoration would involve stabilization of the streambanks, habitat enhancement structures, and other instream structures. Additionally, a native riparian corridor would be established on the banks.

To accomplish this work, the following tasks would be conducted:

- Evaluation of existing conditions, including soils, vegetation, hydrology and stream morphology;
- Preparation of a clearing and grading plan to depict how the project area will be prepared for the stream restoration, and establishment of proper soil media for vegetation planting;
- Preparation of a planting plan to identify species of native vegetation and location of plantings;
- Preparation of a site plan to include stream grading, pattern/profile, in-stream grade control structures and deer/wildlife protection;
- Preparation of a report to identify project goals, success criteria and a contingency plan.

2.1.2 No Build Alternative

Under the No Build Alternative, restoration of Cresheim Creek would not occur, allowing continued degradation of the stream. Streambank erosion and undercutting would continue, obstructions would not be removed, outfall protection would not be installed, and the creek would continue to lack riparian buffers.

2.2 ROAD IMPROVEMENTS

2.2.1 Build Alternative

Under the Build Alternative, the USDA would repair sections of the Lower Road, driveways and paved surfaces that are deteriorated. Due to funding limitations, a phased construction approach will be developed.

2.2.2 No Build Alternative

Under the No Build Alternative, no road improvements would occur, resulting in the conditioned use of deteriorated roadways.

2.3 WALKING PATH

2.3.1 Build Alternative

The USDA is seeking to partner with the Philadelphia Water Department and the Friends of the Wissahickon for full remediation of Cresheim Creek. Additionally, according to the feasibility study for the Cresheim Trail (Campbell Thomas & Co. Architects, 2008), there are long term plans to connect Mermaid Park to the Cresheim Trail system. Therefore, USDA is proposing to incorporate a walkable path for public use along the outside of the ERRC fence line.

2.3.2 No Build Alternative

Under the No Build Alternative, no walking path would be constructed along Cresheim Creek.

SECTION 3.0
EXISTING ENVIRONMENTAL CONDITIONS

3.1 LAND RESOURCES

3.1.1 Geology

The project area lies in the Piedmont Upland Section of the Piedmont Province. The Piedmont Upland Section consists of broad, gently rolling hills and valleys. This upland area is developed mainly on metamorphic rocks called schists. These rocks usually have a very well-developed plane (schistocity) that was formed during metamorphism. This plane dips at moderately steep angles to the south and stream erosion is often either parallel to or normal to the plane of schistocity. In some places the drainage pattern has a very pronounced rectangular orientation, but for the most part the drainage pattern is dendritic. Local relief is generally less than 300 feet, but it can be as much as 600 feet. Elevations in the section range from 100 to 1,220 feet, but are generally between 400 and 600 feet.

Site specific geotechnical studies will be performed prior to construction activities.

3.1.2 Soils

A review of the existing soils was performed based on available information from the NRCS Web Soil Survey data for Montgomery County, PA. Based on this review, two types of soils exist within the facility. One of the soil types in the facility are hydric. Refer to Figure 4 and Table 2 for a map and description of the existing soil types.

TABLE 2
PROJECT AREA SOILS

SYMBOL	DESCRIPTION	HYDRIC RATING
UugB	Urban land-Udorthents, schist and gneiss complex, 0 to 8 percent slopes	Yes
UgB	Urban land, 0 to 8 percent slopes	No

Construction suitability for project area soils, based on the NRCS soil survey, is listed in Table 3.

TABLE 3
CONSTRUCTION SUITABILITY CHART

SYMBOL	Bldgs. (3 stories or less with basements)	Lawns, landscaping, golf fairways	Impoundments, Embankments	Road Fill
UugB	Somewhat Limited	Somewhat Limited	Somewhat Limited	Poor
UgB	Not Rated	Not Rated	Not Rated	Not Rated

3.1.3 Topography

As shown in Figure 1, the ERRC site is located in a very gently rolling topography. Elevations range from EL 350 to EL 400 feet. The USGS quadrangle map of the facility and vicinity is shown on the Project Location Map (Figure 1).

3.2 WATER RESOURCES

3.2.1 Surface Waters

The ERRC site is bordered on the southwest Cresheim Creek, and a small lake is adjacent the western edge of the property. Cresheim Creek drains the lake and is part of the Wissahickon tributary system that feeds to the Philadelphia water system. Cresheim Creek is listed as a Trout Stocked Fishery (TSF) under Chapter 93 of the PA Code, Water Quality Standards. The ERRC is not within a sole source aquifer.

3.2.2 Wetlands

The National Wetland Inventory (NWI) map for the ERRC facility identifies one wetland, a small lake identified as a palustrine, unconsolidated bottom, semi permanently flooded, diked impoundment (PUBFh), located adjacent to its western property boundary (Figure 5). This lake feeds into Cresheim Creek.

A site visit was conducted within the ERRC site on October 25, 2018 by Cedarville Engineering Group, LLC to determine if wetlands were present within the project area. No wetlands were identified. A copy of the wetland delineation report can be found in Appendix B.

3.2.3 Floodplains

A review of FEMA FIRMs (Figure 6) revealed that no portion of the ERRC site lies within a flood hazard zone and that the entirety of the Facility lies in Zone X, which is located outside of the 500-year floodplain.

3.2.4 Groundwater

According to the USDA NRCS Web Soil Survey, depth to groundwater in the vicinity of the project location is generally at 6.5 feet. Site specific geotechnical studies will be performed prior to construction activities, and depth to groundwater observations will be recorded at that time.

Fluctuations in groundwater levels can be expected due to precipitation, evaporation, surface run-off, construction activities, and other similar project-related activities.

3.3 BIOLOGICAL RESOURCES

This section describes the local biological resources found within the ERRC site. Biological resources within the project area were characterized based on reviews of available database inventories, resource agency correspondence, and direct field observations during which the characterization of vegetative communities, identification of dominant plant species, and documentation of wildlife were conducted. Habitats in which species were observed were evaluated and compared to their individual preferred habitats.

3.3.1 Vegetation

The ERRC site is situated in a residential area. The site consists primarily of paved surfaces and maintained grass, with a riparian corridor adjacent to Cresheim Creek. Vegetation within the riparian corridor consists of a mixture of upland forest and understory scrub/shrub vegetation. The understory vegetation consisted primarily of invasive or weedy species, including Japanese knotweed (*Fallopia japonica*), pokeweed (*Phytolacca americana*), and wineberry (*Rubus phoenicolasius*). The upland forest species included bitternut hickory (*Carya cordifomis*), black cherry (*Prunus serotine),* black locust (*Robinia pseudoacacia*), red maple (*Acer rubrum*), and dogwood (*Cornus florida*).

3.3.2 Wildlife

The land use at and surrounding ERRC does not provide habitat for a diverse assemblage of wildlife species. The habitat is suitable for species common to human habitations.

Table 4 presents the wildlife species that were either observed during the site visits or could occur within the ERRC based on the habitats identified.

Table 4 – Representative Wildlife Commonly Found at the ERRC

Common Name	Scientific Name	Common Name	Scientific Name
American toad	*Bufo americanus*	Opossum	*Marmota Monax*
Eastern box turtle	*Terrepene carolina*	White-tailed deer	*Odocoileus virginianus*
Gray Squirrel	*Sciurus carolinensis*	Red-tailed hawk	*Buteo jamaicensis*
Blackbird	*Euphagus carolinus*	White-footed mouse	*Peromyscus leudopus*
American robin	*Turdus migratorius*	Raccoon	*Procyon lotor*
Mockingbird	*Mimus gundlachii*	Garter snake	*Thamnophis sirtalis*
American Crow	*Corvus brachyrhynchos*	Eastern cottontail rabbit	*Sylvilagus floridanus*
Groundhog	*Marmota monax*	Gray tree frog	*Hyla versicolor*
Red eft	*Notophthalmus viridencens*	Chipmunk	*Tamias striatus*
Striped Skunk	*Mephitis mephitis*	Eastern mole	*Scalopus aquaticus*
Blue jay	*Cyanocitta cristata*	Mourning dove	*Zenaida macroura*

3.3.3 Rare, Threatened and Endangered Species

In Pennsylvania, state and federal endangered species fall under the jurisdiction of four agencies, including the Pennsylvania Department of Conservation and Natural Resources (DCNR), the PA Fish and Boat Commission (PFBC), the PA Game Commission (PGC) and the USFWS. An on-line PNDI was conducted on October 31, 2018 to determine if there was a potential for the project to impact threatened and/or endangered species. The PNDI resulted in no known impacts, and no further review required with the PGC, DCNR, PFBC and the USFWS.

3.4 CULTURAL RESOURCES

Implementation of proposed Federal actions must comply with the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq., as amended). Under the NHPA, consideration of historic and archeological preservation issues must be integrated into the early stages of project planning by Federal agencies.

Under Section 106 of the NHPA, a Federal agency is required to account for the effects of proposed actions on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP), prior to the expenditure of funds on the action. Section 110 of the NHPA requires the identification and evaluation of any cultural resources on Federal property that meet the eligibility criteria of the NRHP. The Pennsylvania State Historic Preservation Office (SHPO), is part of the Pennsylvania Historical and Museum Commission (PHMC). It is the responsibility of PHMC to consult with Federal agencies in accordance with Section 106.

A SHPO Project Review Form was submitted to the PHMC on November 15, 2018. According to the Project Review Form, the project site does not contain any resources listed on or eligible for the National Register of Historic Places. PHMC responded on November 30, 2018 that they concurred with the assessment that there are no historic properties within the Area of Potential Effect (APE).

3.5 AIR QUALITY

The ERRC maintains a General Air Permit which was renewed in 2018. Ongoing and future construction activities within the facility must comply with all local and regional air quality regulations.

The proposed projects would not threaten the attainment status of the region, would not produce substantial greenhouse gas (GHG) emissions, or would not lead to a violation of any Federal, state, or local air regulation. In compliance with CEQ and U.S Environmental Protection Agency (USEPA) guidance, a detailed qualitative and quantitative analysis of carbon dioxide (CO_2) equivalents is not required for the proposed actions.

3.6 NOISE

Existing noise generating sources at ERRC would be limited primarily to general vehicular and traffic, which is common in the project vicinity. In Springfield Township, the noise ordinance prohibits construction activities between 6 p.m. and 7:30 a.m.

3.7 INFRASTRUCTURE

3.7.1 Utilities

To assess the existing utility system, STV conducted the following;

- Reviewed existing as-built drawing information and project construction drawings.
- Interviewed USDA personnel.
- Conducted a field verification and investigation of existing conditions.

A plan illustrating the location of utilities is found in Figure 7.

3.7.2 Transportation and Parking

Major public roads that provide access to the ERRC site include Mermaid Lane, Stenton Avenue, Ivy Hill Road, and Queen Street. Access for employees to facility grounds is off Mermaid Lane. Mermaid Lane forms the northern boundary of the ERRC site. All parking spaces at the ERRC site are paved. In addition to the 175-200 employees that access the ERRC, there are 10-15 contractor trucks at the ERRC each week, and 10-15 delivery trucks per day. The majority of the delivery trucks go to the pilot wing door of the main building.

3.8 HAZARDOUS MATERIALS/WASTE AND SOLID WASTE

3.8.1 Hazardous Materials/Waste

The Hazardous Operations Building, located in the southern portion of the facility (see Figure 3), houses an irradiator. The irradiator is a sealed source of radiation, and as such, does not pose a threat to the environment. As required by the Department of Homeland Security (DHS), protective bollards surround the vehicle entrance to this building (see Photo 12 in Appendix C) for added safety. Historically, this building contained nitrate and nitrite for bomb studies, which is where the name originated from.

A Solvent Storage Building is located near the boiler house. Hazardous materials from the Solvent Storage Building are disposed of every six month by Clean Harbors, a waste management company specializing in hazardous material management. The majority of hazardous wastes generated at ERRC are recycled. Additional hazardous materials are stored in a waste hazard/solvent storage building labeled (see Photo 11). This building is used for additional capacity, augmenting the capacity of the Solvent Storage Building. This building has not been used for several years. An eye wash station is located outside the chemical storage facility.

The majority of hazardous materials used at ERRC are bio-level 2 bacterial materials, solvents, and low quantity lithium. All drains within the laboratory are plugged; nothing is released into Cresheim Creek.

There was a past spill of No. 6 fuel oil from a tank overflow around 1997/1998. This spill was subsequently cleaned.

Fill material of unknown origins was identified along a portion of the banks of Cresheim Creek in the westernmost portion of the creek.

3.8.2 Solid Waste

Dumpsters are located throughout the ERRC facility to contain yard debris, construction debris and other facility wastes (see Photo 10). There are two dumpsters near the main building that are used for general and recyclable trash. There is a smaller dumpster at the back of the property that is used for landscaping waste. There is a large dumpster behind Mechanical Services Building

that is for metal recyclables. The trash dumpsters are emptied once a week. The landscaping and metal waste dumpsters are on call - typically not picked up more than once or twice a month.

3.9 RECREATION

While there are no public recreational facilities within the ERRC, Mermaid Park, owned by Springfield Township, is located immediately northeast of the ERRC. Mermaid Park is a seven acre passive recreation facility, consisting of a pond and a portion of Cresheim Creek, park benches and shade trees.

3.10 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898 of February 11, 1994 addresses environmental justice in minority populations and low-income populations that may be affected by federal projects. This program requires federal agencies such as the USDA to ensure its projects do not discriminate against persons on the basis of race, color, or national origin. Federal projects must be accomplished such that minority and low-income populations are not subject to disproportionately high and adverse environmental effects. The proposed project will essentially have no environmental impacts, and will have a net positive impact on the surrounding community by stabilizing the banks of Cresheim Creek and providing a public walking trail. Additionally, all persons will have access to the path, regardless of race, religion, or national origin. Therefore, this project demonstrates compliance with the EO.

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

This section describes potential impacts or effects, if any, of the Proposed Actions (Build Alternatives) and the No Build Alternatives, as identified in Section 2. Environmental effects are described as changes to the biophysical and socioeconomic environment, either positive or negative, from a desirability standpoint. In accordance with CEQ regulations (specifically sections 1500.4 and 1501.7), this EA includes detailed discussions of only those resources deemed to be potentially impacted by this project.

As discussed in Section 3.2, there are no wetlands or mapped 100-year floodplains within the ERRC. Therefore, no further evaluation of these resources is included in this section.

As discussed in Section 3.3, the project site does not contain suitable habitat for any T&E species; no additional coordination will be needed with the PFBC, PGC, DCNR or USFWS for activities that require federal or state permits. Therefore, no further evaluation of T&E species is included in this section.

As discussed in Section 3.4, impacts to cultural and archeological resources will be updated upon completion of coordination with PHMC.

Where potential environmental impacts are identified, specific mitigation measures are described. The purpose of mitigation is to reduce the undesirable effects of an action on the environment. Five means of mitigation are available for consideration, including avoidance of the impact, limitation of action, restoration of the resource, reduction over time by preservation/maintenance, and replacement of the resource.

4.1 STREAM RESTORATION

4.1.1 Build Alternative

Under the Build Alternative, the USDA would restore and stabilize a portion of the banks of Cresheim Creek, where the creek is located adjacent to ERRC property.

Potential adverse impacts that warrant further discussion include impacts associated with soils, surface waters, wildlife, noise, utilities and hazardous waste.

Soils

Earthwork and other related construction activities would involve temporary impacts to site soils by the construction equipment used to conduct stream restoration activities. During site construction activities, stormwater management and E&S control measures would be implemented and adhered to in accordance with PADEP and MCCD requirements. Through appropriate measures and the installation of BMPs, off site wetlands and streams would be protected from inadvertent sediment runoff during construction activities.

Surface Waters

Under the Build Alternative, the banks of Cresheim Creek adjacent to ERRC would be restored and stabilized. As a result, erosion of the streambanks would be reduced, improving the water quality of downstream waterways including Cresheim Creek and the Wissahickon Creek. The Build Alternative would result in a positive impact to water quality in the portion of Cresheim Creek being stabilized and downstream surface waters, as well as improving the aesthetic properties of the creek.

Wildlife

Proposed construction activities will have a direct, but temporary impact on wildlife within the project area. However, little to no habitat will be lost by this project, and stream enhancements and planting of a native riparian corridor will ultimately improve habitat for fish and wildlife.

Noise

The project area is adjacent to residential areas; therefore, noise sensitive receptors are present in the vicinity of this project. However, construction activities related to this project would be minor and temporary in duration. The contractor would adhere to local noise ordinances regarding when construction can begin in the morning, and when it must conclude in the evening (i.e. no construction between 6 p.m. and 7:30 a.m.). Therefore, noise impacts during construction are anticipated to be insignificant.

Utilities

The stream restoration plan will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction. During excavation activities, contact with subsurface utilities (e.g, electrical, natural gas, sewer, etc.) that are found in the facility must be avoided. The contractor should take great care to avoid inadvertent contact with any subsurface utilities during construction.

Hazardous Waste

Fill material of unknown origins was found along a portion of the banks of Cresheim Creek. Further investigation of this material should be conducted prior to construction activities.

4.1.2 No Build Alternative

Under the No Build Alternative, the banks of Cresheim Creek would continue to erode, and downstream surface water quality would be negatively affected as a result.

4.2 ROAD IMPROVEMENTS

4.2.1 Build Alternative

Under the Build Alternative, the USDA would repair driveways and paved surfaces throughout the south side of the ERRC, resulting in minor disturbances to soils. Potential adverse impacts that warrant further discussion include impacts associated with soils, noise, utilities and traffic, and solid wastes.

Soils

Repaving of roads and parking lots involves temporary impacts to site soils. During site construction activities, stormwater management and E&S control measures would be implemented and adhered to in accordance with PADEP and the MCCD requirements. Through appropriate measures and the installation of BMPs, off site wetlands and streams would be protected from inadvertent sediment runoff during construction activities.

Noise

The project area is adjacent to residential areas; therefore, noise sensitive receptors are present in the vicinity of this project. However, construction activities related to this project would be minor and temporary in duration. The contractor would adhere to local noise ordinances regarding when construction can begin in the morning, and when it must conclude in the evening (i.e. no construction between 6 p.m. and 7:30 a.m.). Therefore, noise impacts during construction are anticipated to be insignificant.

Utilities

The road improvement plans will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction. During excavation activities, contact with subsurface utilities (e.g, electrical, natural gas, sewer, etc.) that are found in the facility must be avoided. The contractor should take great care to avoid inadvertent contact with any subsurface utilities during construction.

Traffic

Traffic patterns within the ERRC will be temporarily impacted during repaving activities. However, construction will be conducted in phases to minimize impacts.

Solid Waste

Demolition waste (e.g., construction debris) will be managed and transported to a solid waste landfill.

4.2.2 No Build Alternative

Implementation of the No-Build Alternative would have no significant short or long-term effects on the biophysical or socioeconomic environment. However, pavement existing pavement in the lower roadways would continue to deteriorate.

4.3 WALKING PATH

4.3.1 Build Alternative

Under the Build Alternative, the USDA, in partnership with the Philadelphia Water Department and the Friends of the Wissahickon, would construct a walking path adjacent to Cresheim Creek, resulting in minor disturbances to soils and vegetation. Potential adverse impacts that warrant further discussion include impacts associated with soils, surface waters, vegetation, noise, utilities and recreation.

Soils

Earthwork and other related construction activities would involve temporary impacts to site soils by the construction equipment used to construct a walking path. During site construction activities, stormwater management and E&S control measures would be implemented and adhered to in accordance with PADEP and MCCD requirements. Through appropriate measures and the installation of BMPs, off site wetlands and streams would be protected from inadvertent sediment runoff during construction activities.

Surface Waters

Direct impacts to surface waters would be avoided with the use of BMPs and an E&S plan to avoid sedimentation from entering Cresheim Creek during construction of the walking path. Additionally, consideration will be given to use porous paving or other pervious options for path materials to reduce the amount of runoff from the path entering into Cresheim Creek.

Vegetation

Vegetation along the riparian corridor will need to be removed in order to construct the walking path. Efforts will be made to avoid mature tree removal. Understory vegetation consists of predominantly weedy or invasive species, so removal of these species, and replanting of native species, would enhance the riparian corridor.

Noise

The project area is adjacent to residential areas; therefore, noise sensitive receptors are present in the vicinity of this project. However, construction activities related to this project would be minor and temporary in duration. The contractor would adhere to local noise ordinances regarding when construction can begin in the morning, and when it must conclude in the evening (i.e. no construction between 6 p.m. and 7:30 a.m.). Therefore, noise impacts during construction are anticipated to be insignificant.

Utilities

The walking path design will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction. During excavation activities, contact with subsurface utilities (e.g, electrical, natural gas, sewer, etc.) that are found in the facility must be avoided. The contractor should take great care to avoid inadvertent contact with any subsurface utilities during construction.

Recreation

Construction of a walking path along Cresheim Creek would provide direct access from residences along East Lane and points south, to Mermaid Park. Additionally, according to the feasibility study for The Cresheim Trail (Campbell Thomas & Co. Architects, 2008), there are long term plans to connect Mermaid Park to the Cresheim Trail system. Construction of the walking path would facilitate these efforts.

4.3.2 No Build Alternative

Implementation of the No-Build Alternative would have no significant short or long-term effects on the biophysical or socioeconomic environment.

SECTION 5.0
UNAVOIDABLE ADVERSE IMPACTS

Environmental impacts represent changes from the current situation and its environment that may be considered undesirable, but necessary to achieve the overall goals of the project. This project is proposed to occur entirely on a pre-existing research facility; site use and activities are projected to continue in its current form. Therefore, design plans will have limited impact on the project site and surrounding area. The intent of this chapter is to summarize environmental impacts that cannot be avoided, as required under 40 CFR, Part 1502.16. This section summarizes the potential unavoidable adverse impacts associated with implementing any of the alternatives.

Alternative 1 – Proposed Action

Unavoidable adverse impacts associated with implementing Alternative 1 (Proposed Action) would include:

- Impacts to site soils and topography that would occur during construction activities. These impacts are expected to be minor.

- Small, but temporary additions of pollutants to the atmosphere as a result of operating heavy equipment during construction activities, and transportation of materials and wastes to and from the project area. Idling vehicles of any kind will be discouraged during construction activities.

- Disposal of waste materials from the construction activities (primarily from the Road Improvements Project) will result the expenditure of landfill space at the receiving facility.

- Short term noise impacts from the operation of heavy equipment, while temporary, are considered unavoidable. Contractors should be encouraged to maintain a regular maintenance program for heavy equipment to ensure that machinery is operating at peak efficiency relative to noise output.

Alternative 2 – No Action

This action would result in no unavoidable adverse impacts. No action would result in the facility continuing to operate under its current conditions. However, under the No Action Alternative for the Stream Restoration Project, the banks of Cresheim Creek would not be stabilized, and downstream erosion would not be reduced.

SECTION 6.0
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitments are those that are not reversible in the short term, and only potentially reversible or recoverable in the extreme long term. An example of this would be mining of coal or minerals, where once the material is removed from the earth, it cannot be replaced.

Implementation of the Preferred Alternative would involve the irreversible and irretrievable commitment of various natural, human, and fiscal resources. These resources would be permanently dedicated to the public use. Although utilization of the land can be considered an irreversible commitment of resources, it may be possible to convert the property to another use, should a greater need for the land be demonstrated. It is not anticipated, however, that this situation would occur.

Resources committed to this project that are not considered recoverable include fossil fuels, labor, construction materials, and financial resources. Electric power, gasoline, and diesel fuels would be consumed by worker vehicles, machinery, and tools during construction activities. Upon completion of the project, fuel, power, and labor resources would largely remain at the current usage levels. Commitment of funds for design and implementation of the project reduces the availability of these resources for other projects. Construction materials used during the project would be considered an irreversible and irretrievable commitment of resources; however, most of these materials are not considered to be in short supply.

SECTION 7.0
CUMULATIVE EFFECTS

Cumulative effects include the total effect of an action, including direct and indirect effects, on the resources within the project area and the human environment surrounding the project area regardless of who has taken the action (e.g, federal, nonfederal, private). The purpose of reviewing cumulative effects is to address or evaluate the additive impacts of primary, secondary, and tertiary impacts within the project area. In order to avoid evaluating cumulative impacts on too grand a scale, this EA focused on only those effects that would be truly meaningful.

This project would occur within an existing research campus consisting of maintained lawns, paved roads/parking areas and existing buildings; land use and site activities are expected to remain unaffected into the future. Construction activities and the end result of the project are not expected to result in any adverse impacts to visual resources, traffic patterns, land use, or other environmental resources, and in fact, would have a positive cumulative impact to watercourses and the community as a whole.

SECTION 8.0
LIST OF PREPARERS & REVIEWERS

The following are primarily responsible for the preparation and review of this NEPA Environmental Assessment:

United States Department of Agriculture

Neil Goldberg	Location Monitor
Trisha Vigil	Engineering Project Manager
Sevim Erham	Research Leader
Joanne Sullivan	Administrative Officer
Bonnie Disalvo	Safety, Health & Env. Branch Rep
Phoebe Bordelon	Real Property Man. Rep

STV Incorporated

	Contributions
Shamarukh Billah, PE	Project Manager
Wendy Schellhamer, Sr. Env. Scientist	Report Preparation, Coordination, Editor
Adam Wood, Environmental Scientist	Report Preparation
Peter Gaskins, Sr. Env. Scientist	QA/QC

SECTION 9.0
REFERENCES

Campbell Thomas & Co. Architects. *A Feasibility Study for the Cresheim Trail*. May 23, 2008.

Cedarville Engineering Group, LLC. *Wetland Delineation Report, USDA Wyndmoor Creek Bed and Lower Road Repairs.* November 15, 2018.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

"Fire Insurance Rate Map Nos. 42091C0383G and 42091C0379G for Springfield, PA". *FEMA Flood Map Service Center*. United States Department of Homeland Security: Federal Emergency Management Agency, 2 Mar. 2016. Web. 26 Feb. 2018.

National Environmental Policy Act of 1969

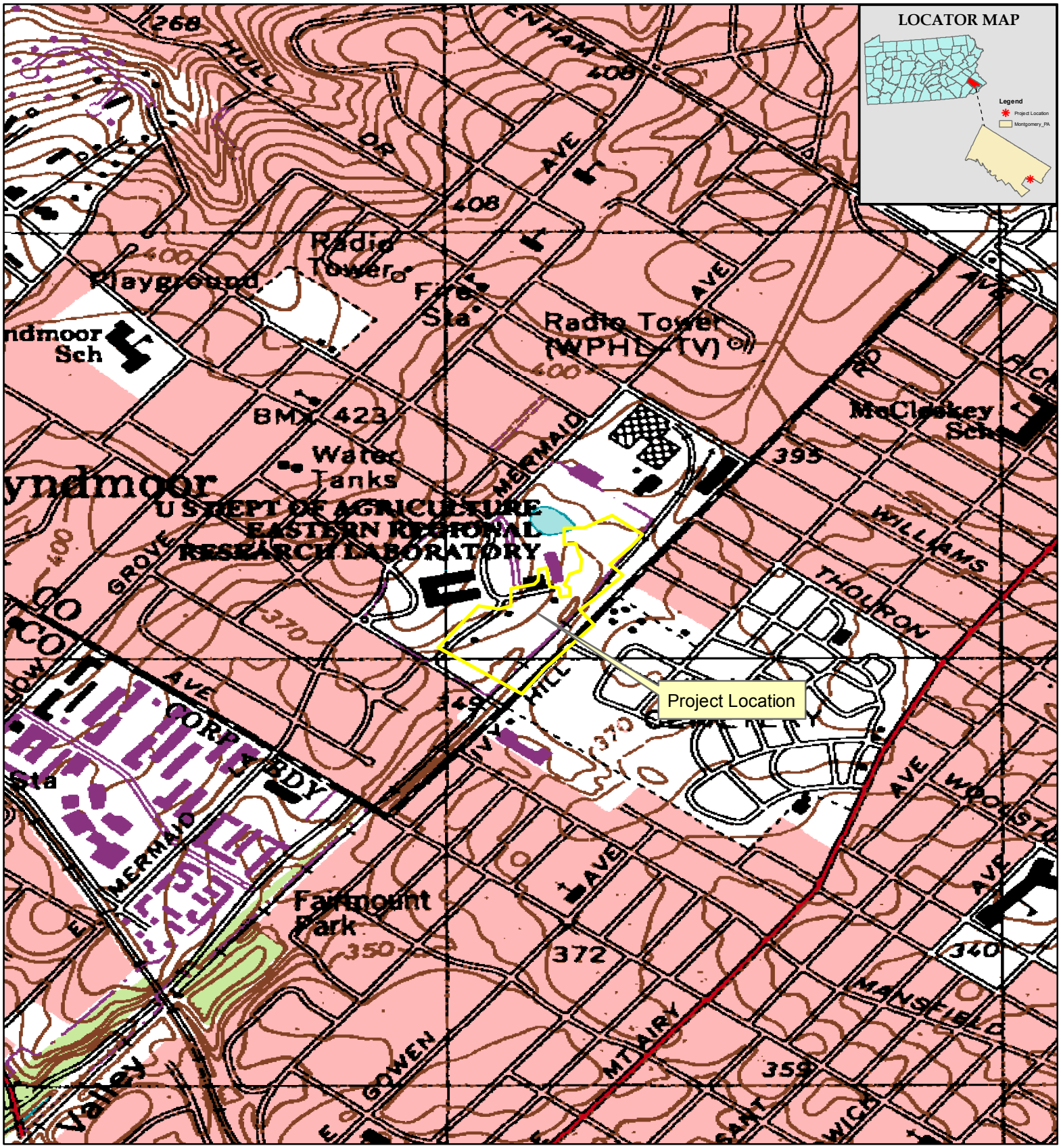
National Historic Preservation Act, Public Law 89-665; 16 U.S.C. 470 *et seq.*

"Soil Survey of Montgomery County, Pennsylvania" *Web Soil Survey*. United States Department of Agriculture: Natural Resource Conservation Service, 13 Dec. 2013. Web. 26 Feb. 2018.

"United States Geologic Survey 7.5' Quad for Germantown, Pa. (2016)". *Pennsylvania Spatial Database Access*. The Pennsylvania Geospatial Data Clearinghouse. Web. 26 Feb. 2018.

"Wetlands Mapper: HUC8-02040203". *National Wetlands Inventory: Surface Waters and Wetlands*. United States Department of the Interior: United States Fish and Wildlife Service, Web. 26 Feb. 2018.

FIGURE 1
Project Location Map (USGS)



0 0.1 0.2 0.4 Miles

1:12,000

Legend

Project Area

N

COMMENTS:

CREEK BED AND LOWER ROADS REPAIRS
AT THE EASTERN REGIONAL RESEARCH CENTER (EERC)
WYNDMOOR
MONTGOMERY COUNTY, PENNSYLVANIA
UNITED STATES DEPARTMENT OF AGRICULTURE

PROJECT LOACTION MAP (*TOPOGRAPHIC*)

USDA

DRAWN BY:	AHW	**DATE:**	10/4/2018
PROJECT NUMBER:	30-19705		
CREATED BY:	STV Energy Services, Inc.		

RESOURCE INFORMATION:
United States Census Bureau (TIGER/Line Data)
Esri ArcGIS Online Web Map Service
- *World Imagery*

FIGURE 1

FIGURE 2
Project Location Map (Aerial)

0 0.1 0.2 0.4 Miles

1:12,000

Legend

— Roads

Project Area

N

COMMENTS:

CREEK BED AND LOWER ROADS REPAIRS
AT THE EASTERN REGIONAL RESEARCH CENTER (EERC)
WYNDMOOR
MONTGOMERY COUNTY, PENNSYLVANIA
UNITED STATES DEPARTMENT OF AGRICULTURE

PROJECT LOACTION MAP (*TOPOGRAPHIC*)

USDA

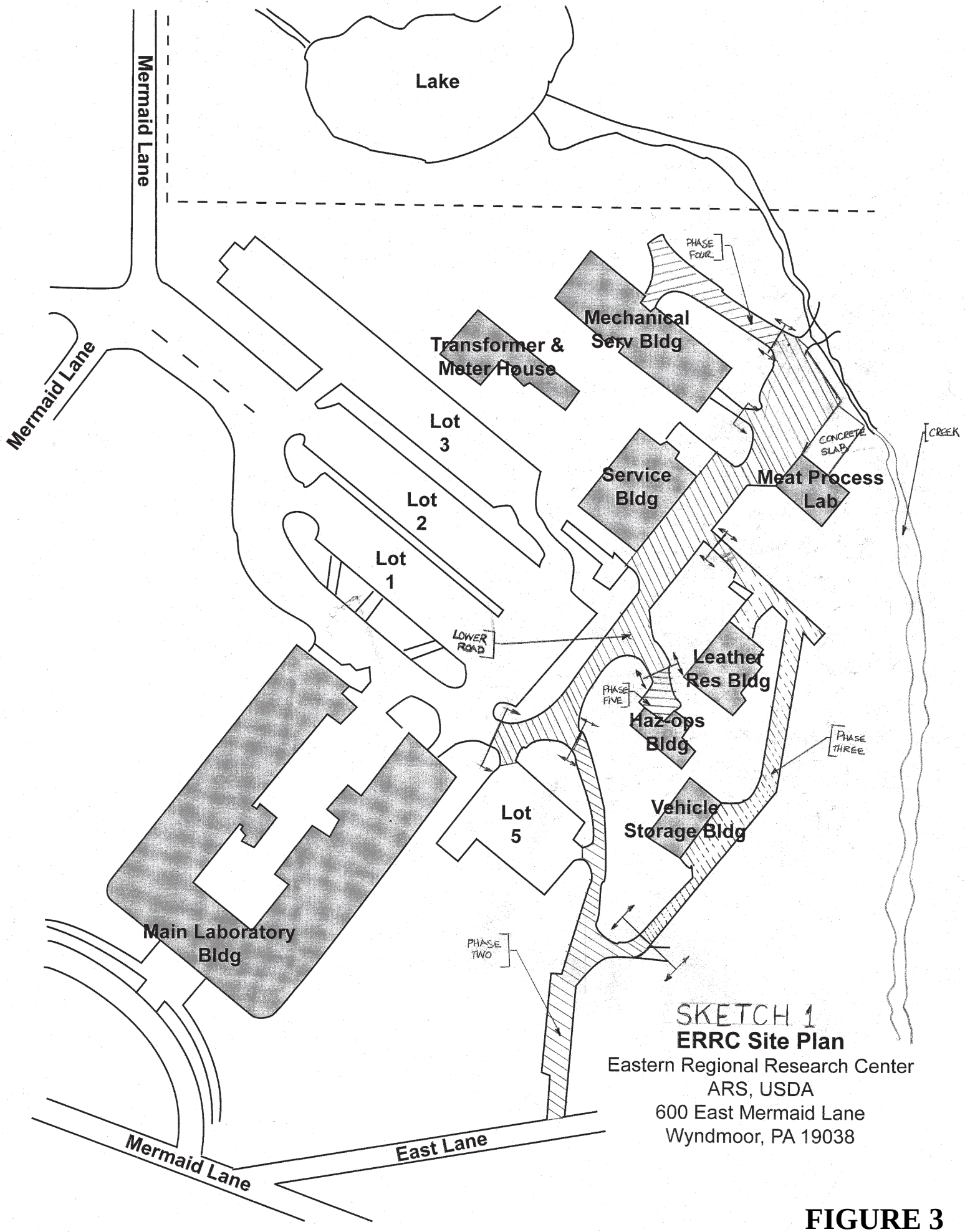
DRAWN BY:	AHW	**DATE:**	10/4/2018
PROJECT NUMBER:	30-19705		
CREATED BY:	STV Energy Services, Inc.		

RESOURCE INFORMATION:
United States Census Bureau (TIGER/Line Data)
Esri ArcGIS Online Web Map Service
- World Imagery

FIGURE 2

FIGURE 3
Site Plan

FIGURE 3



SKETCH 1

ERRC Site Plan

Eastern Regional Research Center
ARS, USDA
600 East Mermaid Lane
Wyndmoor, PA 19038

FIGURE 3

FIGURE 4
NRCS Soils Map

0 0.05 0.1 0.2 Miles

1:6,000

Legend

- Roads
- Project Area
- Soils

N

COMMENTS:

CREEK BED AND LOWER ROADS REPAIRS
AT THE EASTERN REGIONAL RESEARCH CENTER (EERC)
WYNDMOOR
MONTGOMERY COUNTY, PENNSYLVANIA
UNITED STATES DEPARTMENT OF AGRICULTURE

NRCS SOILS MAP

USDA

DRAWN BY:	AHW	**DATE:**	10/4/2018
PROJECT NUMBER:	30-19705		
CREATED BY:	STV Energy Services, Inc.		

RESOURCE INFORMATION:
United States Census Bureau (TIGER/Line Data)
Esri ArcGIS Online Web Map Service
- World Imagery

FIGURE 4

FIGURE 5
USFWS National Wetlands Inventory Map

0 0.05 0.1 0.2 Miles

1:6,000

Legend

- Roads
- Project Area
- Wetlands

N

COMMENTS:

CREEK BED AND LOWER ROADS REPAIRS
AT THE EASTERN REGIONAL RESEARCH CENTER (EERC)
WYNDMOOR
MONTGOMERY COUNTY, PENNSYLVANIA
UNITED STATES DEPARTMENT OF AGRICULTURE
NATIONAL WETLANDS INVENTORY MAP

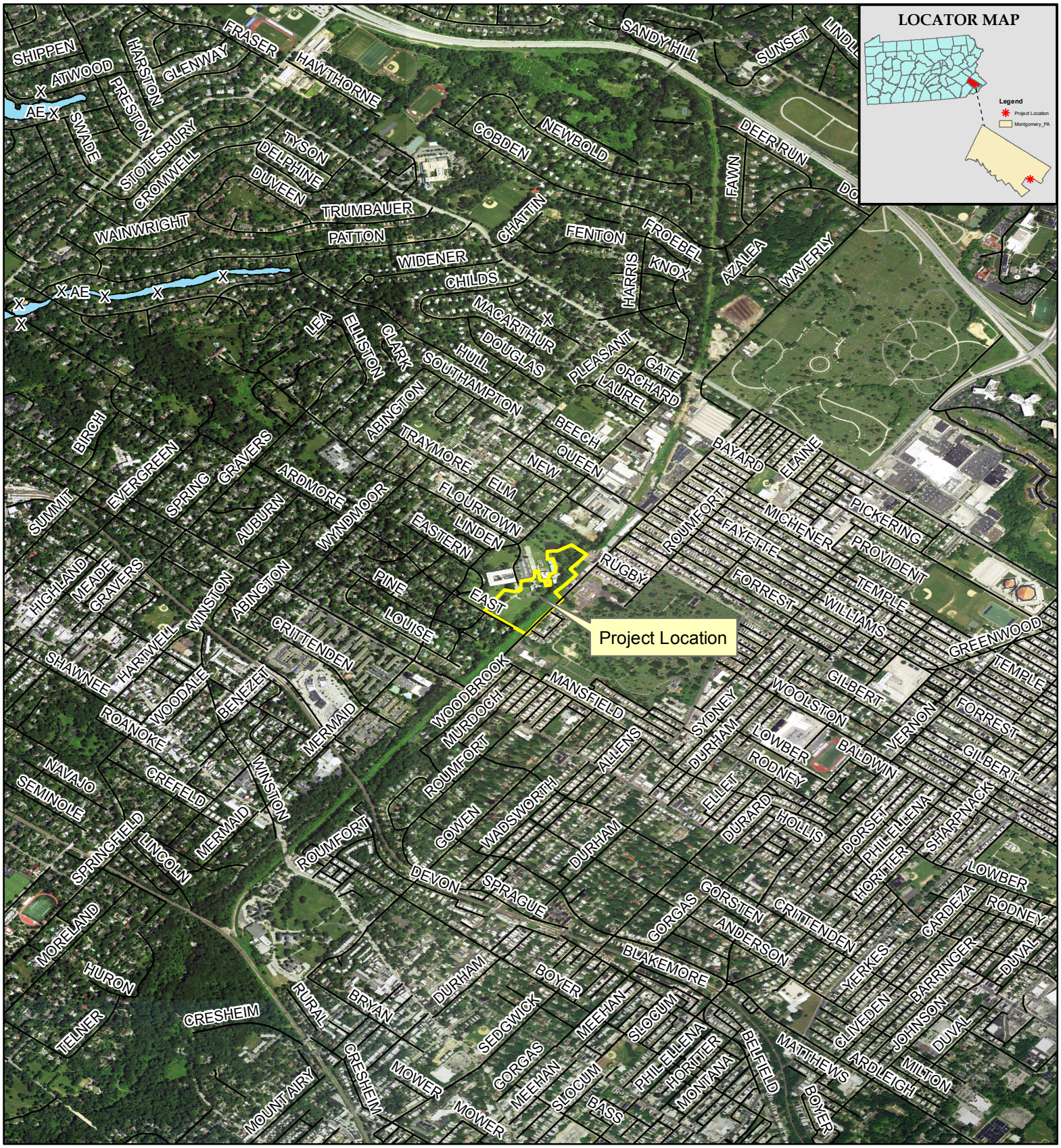
USDA

DRAWN BY:	AHW	**DATE:**	10/4/2018
PROJECT NUMBER:	30-19705		
CREATED BY:	STV Energy Services, Inc.		

RESOURCE INFORMATION:
United States Census Bureau (TIGER/Line Data)
Esri ArcGIS Online Web Map Service
- World Imagery

FIGURE 5

FIGURE 6
FEMA Floodplain Map



0 0.2 0.4 0.8 Miles

1:24,000

Legend

- Roads
- 100-Year Floodplain
- Project Area
- X

N

COMMENTS:

CREEK BED AND LOWER ROADS REPAIRS
AT THE EASTERN REGIONAL RESEARCH CENTER (EERC)
WYNDMOOR
MONTGOMERY COUNTY, PENNSYLVANIA
UNITED STATES DEPARTMENT OF AGRICULTURE

FEMA FLOODPLAIN MAP

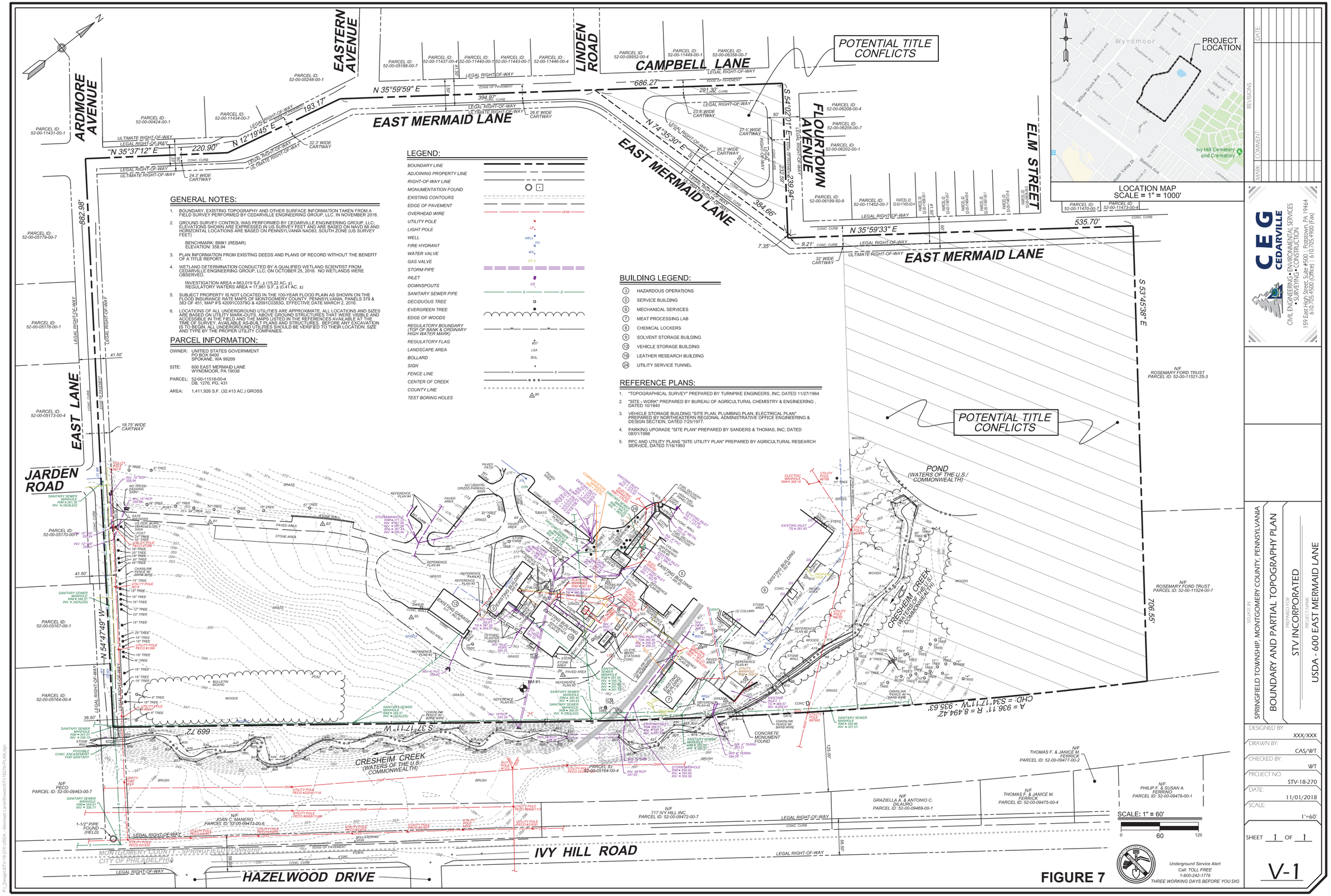
USDA

DRAWN BY:	AHW	**DATE:**	10/4/2018
PROJECT NUMBER:	30-19705		
CREATED BY:	STV Energy Services, Inc.		

RESOURCE INFORMATION:
United States Census Bureau (TIGER/Line Data)
Esri ArcGIS Online Web Map Service
- World Imagery

FIGURE 6

FIGURE 7
Utility Map



GENERAL NOTES:

1. BOUNDARY, EXISTING TOPOGRAPHY AND OTHER SURFACE INFORMATION TAKEN FROM A FIELD SURVEY PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC. IN NOVEMBER 2018.
2. GROUND SURVEY CONTROL WAS PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC. ELEVATIONS SHOWN ARE EXPRESSED IN US SURVEY FEET AND ARE BASED ON NAVD 88 AND HORIZONTAL LOCATIONS ARE BASED ON PENNSYLVANIA NAD83, SOUTH ZONE (US SURVEY FEET)

   BENCHMARK: BM#1 (REBAR)
   ELEVATION: 358.94
3. PLAN INFORMATION FROM EXISTING DEEDS AND PLANS OF RECORD WITHOUT THE BENEFIT OF A TITLE REPORT.
4. WETLAND DETERMINATION CONDUCTED BY A QUALIFIED WETLAND SCIENTIST FROM CEDARVILLE ENGINEERING GROUP, LLC. ON OCTOBER 25, 2018. NO WETLANDS WERE OBSERVED.

   INVESTIGATION AREA = 663,019 S.F.± (15.22 AC. ±)
   REGULATORY WATERS AREA = 17,981 S.F.± (0.41 AC. ±)
5. SUBJECT PROPERTY IS NOT LOCATED IN THE 100-YEAR FLOOD PLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAPS OF MONTGOMERY COUNTY, PENNSYLVANIA, PANELS 379 & 383 OF 451, MAP #'S 42091C0379G & 42091C0383G, EFFECTIVE DATE MARCH 2, 2016.
6. LOCATIONS OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE AND ACCESSIBLE IN THE FIELD AND THE MAPS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF SURVEY. AVAILABLE AS-BUILT PLANS AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.

PARCEL INFORMATION:

OWNER: UNITIED STATES GOVERNMENT
PO BOX 9400
SPOKANE, WA 99209

SITE: 600 EAST MERMAID LANE
WYNDMOOR, PA 19038

PARCEL: 52-00-11518-00-4
DB. 1276, PG. 431

AREA: 1,411,926 S.F. (32.413 AC.) GROSS

LEGEND:

BOUNDARY LINE
ADJOINING PROPERTY LINE
RIGHT-OF-WAY LINE
MONUMENTATION FOUND
EXISTING CONTOURS
EDGE OF PAVEMENT
OVERHEAD WIRE
UTILITY POLE
LIGHT POLE
WELL
FIRE HYDRANT
WATER VALVE
GAS VALVE
STORM PIPE
INLET
DOWNSPOUTS
SANITARY SEWER PIPE
DECIDUOUS TREE
EVERGREEN TREE
EDGE OF WOODS
REGULATORY BOUNDARY (TOP OF BANK & ORDINARY HIGH WATER MARK)
REGULATORY FLAG
LANDSCAPE AREA
BOLLARD
SIGN
FENCE LINE
CENTER OF CREEK
COUNTY LINE
TEST BORING HOLES

BUILDING LEGEND:

3. HAZARDOUS OPERATIONS
5. SERVICE BUILDING
6. MECHANICAL SERVICES
7. MEAT PROCESSING LAB
8. CHEMICAL LOCKERS
9. SOLVENT STORAGE BUILDING
12. VEHICLE STORAGE BUILDING
19. LEATHER RESEARCH BUILDING
24. UTILITY SERVICE TUNNEL

REFERENCE PLANS:

1. "TOPOGRAPHICAL SURVEY" PREPARED BY TURNPIKE ENGINEERS, INC; DATED 11/27/1964
2. "SITE - WORK" PREPARED BY BUREAU OF AGRICULTURAL CHEMISTRY & ENGINEERING , DATED 10/1940
3. VEHICLE STORAGE BUILDING "SITE PLAN, PLUMBING PLAN, ELECTRICAL PLAN" PREPARED BY NORTHEASTERN REGIONAL ADMINISTRATIVE OFFICE ENGINEERING & DESIGN SECTION, DATED 7/25/1977.
4. PARKING UPGRADE "SITE PLAN" PREPARED BY SANDERS & THOMAS, INC; DATED 08/01/1988
5. PPC AND UTILITY PLANS "SITE UTILITY PLAN" PREPARED BY AGRICULTURAL RESEARCH SERVICE, DATED 7/16/1993

MARK	COMMENT	DATE
	REVISIONS	

CEG
CEDARVILLE
CIVIL ENGINEERING • ENVIRONMENTAL SERVICES
• SURVEYING • CONSTRUCTION
159 East High Street, Suite #500 | Pottstown, PA 19464
610.705.1500 [Office] | 610.705.1900 [Fax]

SITUATE IN:
SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

BOUNDARY AND PARTIAL TOPOGRAPHY PLAN

PREPARED FOR
STV INCORPORATED

PROJECT NAME:
USDA - 600 EAST MERMAID LANE

DESIGNED BY:	XXX/XXX
DRAWN BY:	CAS/WT
CHECKED BY:	WT
PROJECT NO.	STV-18-270
DATE:	11/01/2018
SCALE:	1"=60'

SHEET 1 OF 1

V-1

FIGURE 7

P:_Design\STV-18-270 USDA - Mermaid Lane\Sheets\STV18270-PLAN.dgn

APPENDIX A
Agency Coordination Letters

1. PROJECT INFORMATION

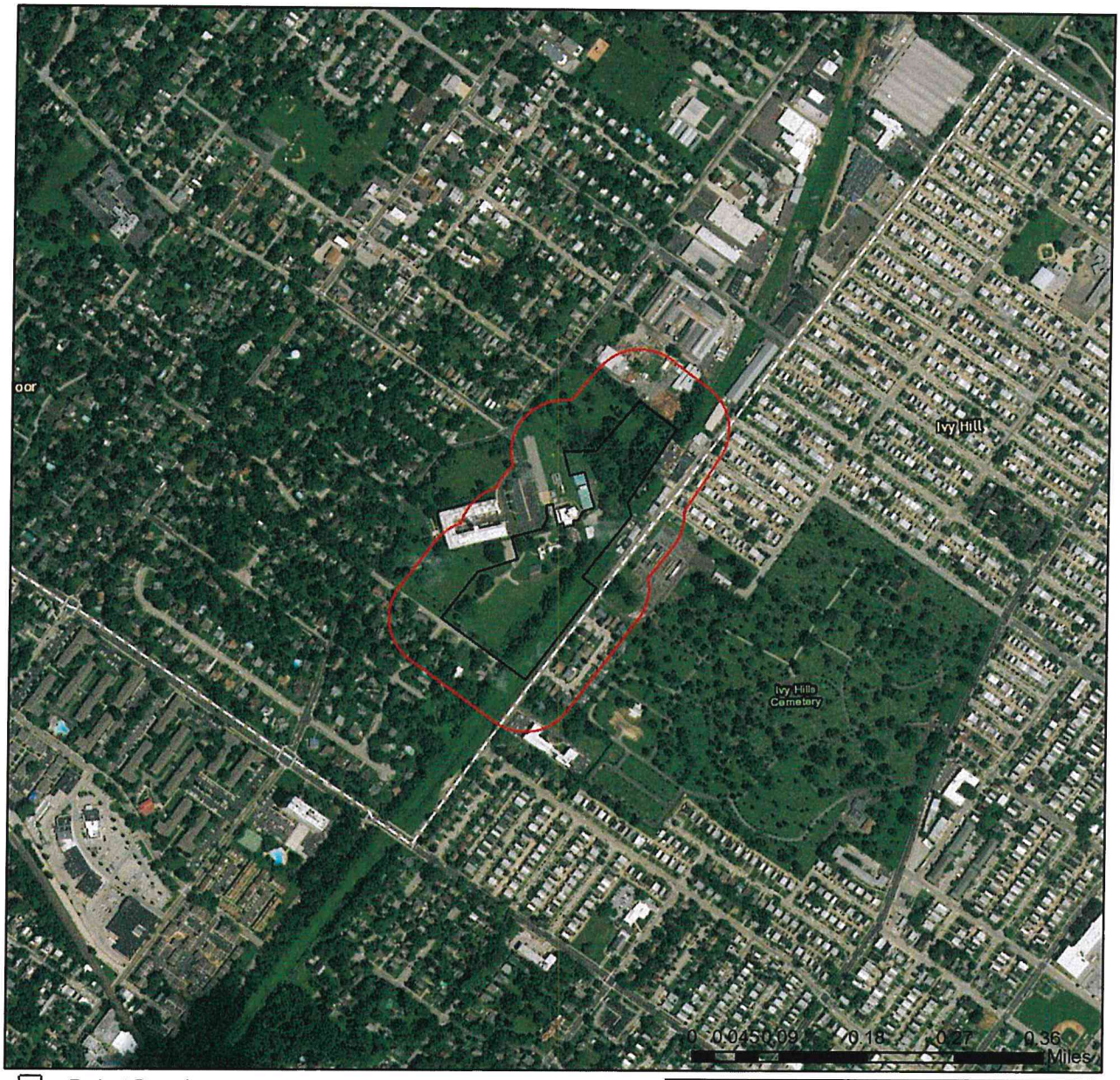
Project Name: **USDA Wyndmoor- Creek Bed and Lower Road Repairs**
Date of Review: **10/31/2018 02:13:57 PM**
Project Category: **Habitat Conservation and Restoration, Streambank stabilization (with riprap)**
Project Area: **14.70 acres**
County(s): **Montgomery**
Township/Municipality(s): **SPRINGFIELD**
ZIP Code: **19038**
Quadrangle Name(s): **GERMANTOWN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.077164, -75.185458**
Degrees Minutes Seconds: **40° 4' 37.7902" N, 75° 11' 7.6476" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

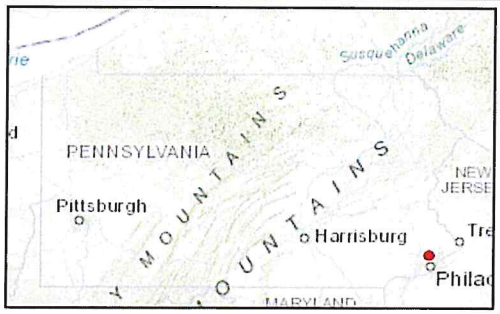
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

USDA Wyndmoor- Creek Bed and Lower Road Repairs



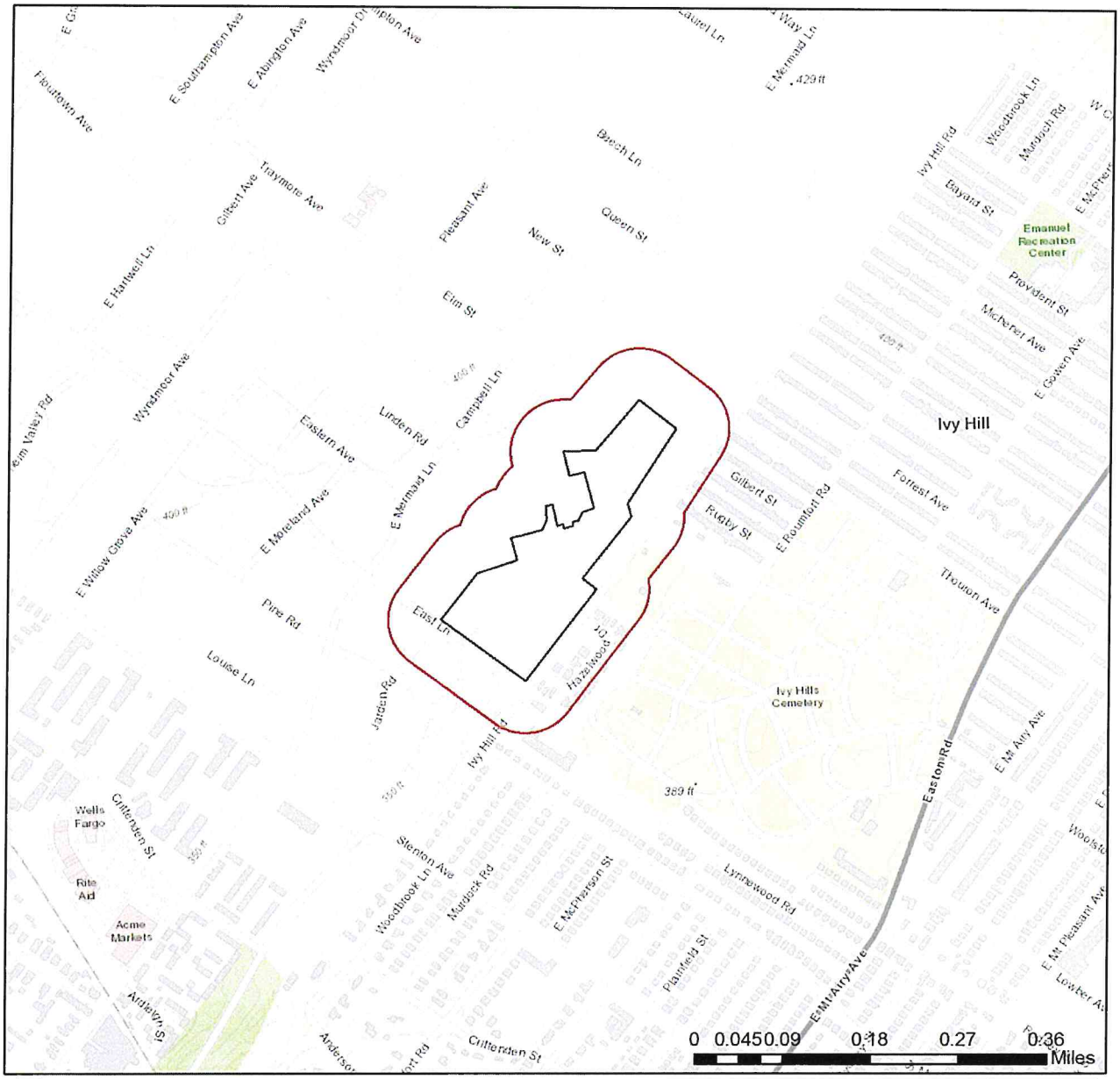
Project Boundary

Buffered Project Boundary



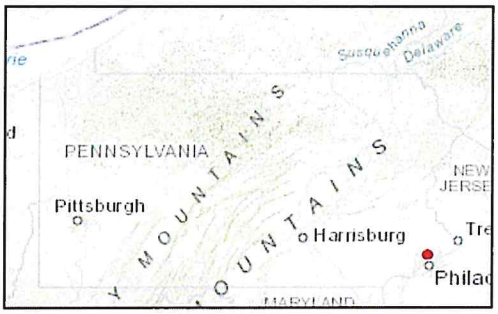
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

USDA Wyndmoor- Creek Bed and Lower Road Repairs



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Beth Uhler
Company/Business Name: CEDARVILLE Engineering Group, LLC
Address: 159 E. High Street, Suite 500
City, State, Zip: Pottstown, PA 19464
Phone: (610) 705-4500 Fax: (610) 705-4900
Email: buhler@cedarvilleeng.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

10/31/2018
date

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ____/____
DATE RECEIVED:	DATE DUE:
ER NUMBER:	HRSF: _____

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? ◉ YES ○ NO **OR** ○ **This is additional information for ER Number:**

Project Name	USDA Wyndmoor Creek Bed & Lower Road Repairs	County	Montgomery	Municipality	Springfield Township
Project Address	600 E Mermaid Lane	City/State/ Zip	Wyndmoor	PA	19038

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name	Beth Uhler	Phone	(610) 705-4500
Company	CEDARVILLE Engineering Group, LLC	Fax	(610) 705-4900
Street/PO Box	159 E. High Street	Email	buhler@cedarvilleeng.com
City/State/Zip	Pottstown/PA/19464		

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☑ Federal property ☐ State property ☐ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
Federal	U.S. Department of Agriculture	Property owner
State & Federal	PA DEP/USACE 105/404 Permitting	Not yet submitted
State & Federal	NPDES Permit for Construction	No yet submitted

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☐ Construction ☐ Demolition ☑ Rehabilitation ☐ Disposition

Total acres of project area: 14 Total acres of earth disturbance: Maximum of 14 acres, exact amount unknown

Are there any buildings or structures within the project area? ◉ Yes ○ No Approximate age of buildings: 79 years

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts	n/a
	○	◉	○		

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map –** 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope –** Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings –** Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs –** Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: _____ **DATE:** _____

November 15, 2018

PHMC
State Historic Preservation Office
400 North Street
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

RE: USDA Wyndmoor Creek Bed and Lower Road Repairs
PHMC Project Review Form
USDA
STV-18-270

Dear Reviewer,

CEDARVILLE Engineering Group, LLC (CEG) is submitting a Project Review Form to the Pennsylvania Historical & Museum Commission (PHMC) on behalf of the Unites States Department of Agriculture (USDA) for proposed road repairs and stream restoration at 600 East Mermaid Lane in Springfield Township, Montgomery County, Pennsylvania.

This project involves the restoration of approximately 1,450 linear feet of the upper reach of Cresheim Creek, a tributary of Wissahickon Creek, on the USDA Eastern Regional Research Center property. The restoration will involve the stabilization of the streambanks, habitat enhancement structures, and other instream structures. In addition, paving improvements are proposed along the lower road on the USDA property within the Area of Potential Effect. It is anticipated that this project will require a Joint Pennsylvania Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers Section 404 Permit for the proposed stream restoration and a National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Construction Activities through the Montgomery County Conservation District.

Land Use

The site was first developed in 1939 as an agricultural research center and is still utilized as an agricultural research center. The historical land use aerial imagery used to assess this property were obtained from Historic Aerials and Penn Pilot to evaluate previous land uses. Imagery was available for the following years: 1942, 1948, 1950, 1958, 1965, 1967, 1971, 1992, 1998, 2002, 2004, 2008, 2010, 2013. Earlier imagery dating prior to the first building constructed on the site is unavailable. Based on the earliest available imagery in 1942, the land use mainly consisted of maintained lawn/open space along with the Main Laboratory and Service buildings. Between 1942 and 1948, the site became more developed with additional parking, roadways, and the construction of the Meat Process Lab building. It appears between 1950 and 1958 that an additional parking lot and the Haz Ops building was added to the property. The Mechanical Service building was constructed on the site between the years 1965 and 1967 and the Vehicle Storage and Leather Res buildings between the years 1971 and 1992. The property maintains the open, lawn space with mature trees throughout the years of available imagery.

The current land use description is, E- Exempt- Federal Government with a lot size of 31.76 acres. There are currently seven (7) buildings, one (1) parking lot, and access drives. There is a 20,000 square foot pond on the property.

Cresheim Creek flows through the property in a southwesterly direction. The other land areas on the property consist of mowed lawn, forest, and meadow.

Description/Scope

This project involves two proposed activities: paving upgrades to roads within the USDA property, and restoration to Cresheim Creek that flows through the property. This project is to take place within the boundary of the USDA Wyndmoor Eastern Regional Research Center (ERRC). No buildings are proposed to be impacted with this project. The project site does not contain any resources listed on or eligible for the National Register of Historic Places.

Cresheim Creek is a perennial stream that flows along the southern ERRC property boundary. A preliminary investigation of Cresheim Creek, conducted by STV Incorporated in 2013, concluded that the Creek was deteriorated due to accelerated stream bank erosion occurring along the banks. Other observations, which express the need for restoration, were noted.

Paving upgrades to the property will be focused on Lower Road driveways and paved surfaces located along the southeastern border of the property within the Area of Potential Effect shown on the enclosed maps. The Area of Potential Effect contains areas that may be disturbed as part of the paving upgrades and stream restoration. As stated above, no buildings will be modified or removed as part of this project scope.

Please reference the attached maps for building and photograph locations, area of potential effect, and parcel boundary, and contact me at 610-705-4500 or buhler@cedarvilleeng.com with any questions. Thank you in advance for your time.

Best Regards,
CEDARVILLE Engineering Group, LLC

Beth Uhler

Beth Uhler
Project Manager

cc: Shamarukh Billah, PE, STV Incorporated

CEG CEDARVILLE

DRAWN BY: AR

USDA Wyndmoor Creek Bed and Lower Road Repairs

Site Map

Springfield Township, Montgomery County, PA

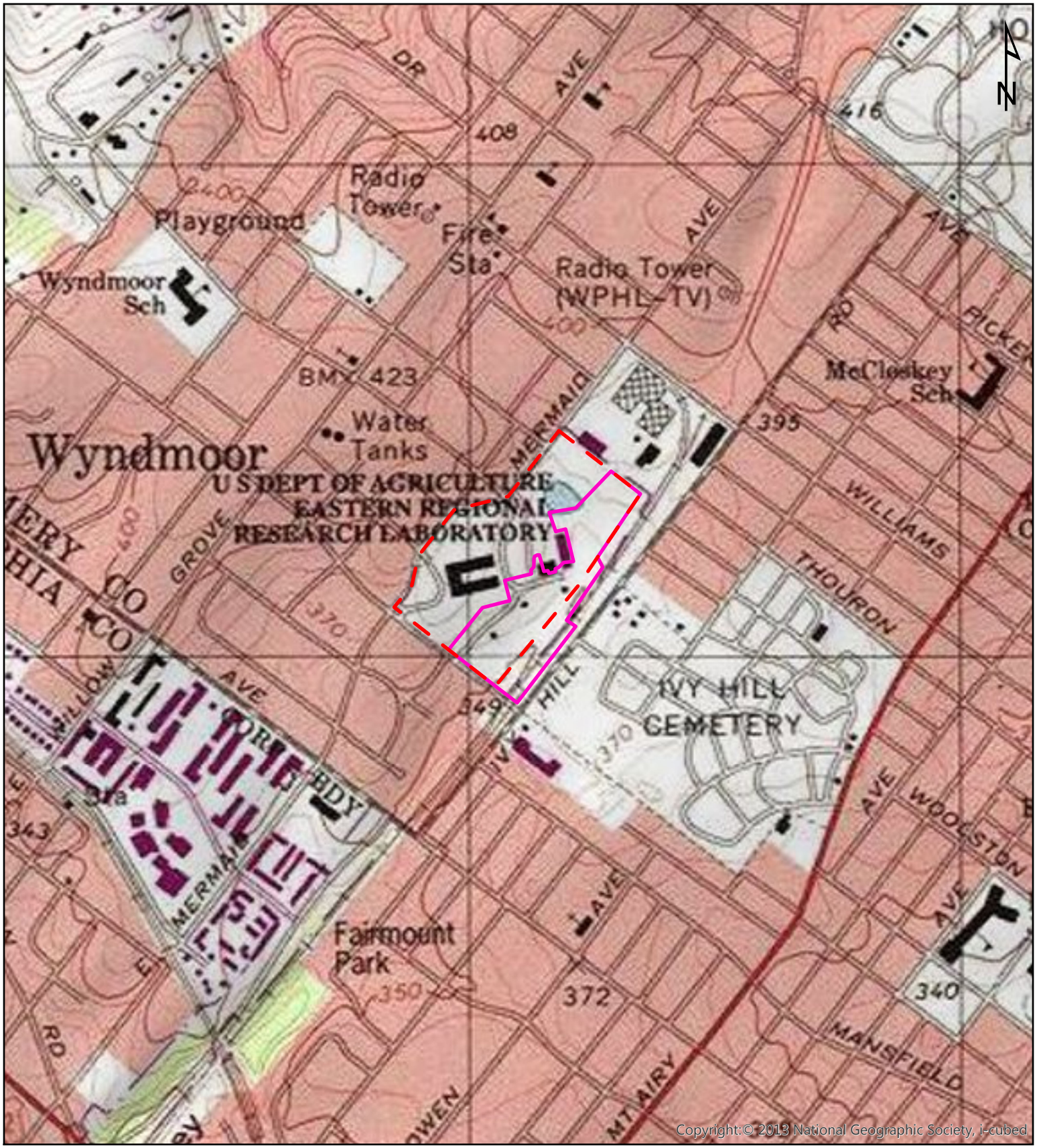
0 100 200 400 600 Feet

11/13/2018

Legend

- Project Parcel
- Area of Potential Effect
- Buildings
- Cresheim Creek

NOTE: All features on this map are approximate.



CEG CEDARVILLE

DRAWN BY: AR

USDA Wyndmoor Creek Bed and Lower Road Repairs

Topographic Location Map

Springfield Township, Montgomery County, PA

0 375 750 1,500 2,250 Feet

11/13/2018

Legend

Project Parcel

Area of Potential Effect

NOTE: All features on this map are approximate.

PHMC Project Review Form Photographs

USDA Wyndmoor Creek Bed and Lower Road Repairs

Photograph 1.A- Front of Main Laboratory Building facing northeast

Photograph 1.B- Front/side of Main Laboratory Building facing southeast

Photograph 1.C- Rear of Main Laboratory Building facing southwest

Photograph 1.D- Rear of Main Laboratory Building facing west

Photograph 1.E- Rear of Main Laboratory Building facing west

Photograph 1.F- Side of Main Laboratory Building facing north

Photograph 2.A- Front of Vehicle Storage Building facing north

Photograph 2.B- Side of Vehicle Storage Building facing west

Photograph 3.A- Rear/side of Haz-ops Building facing northwest

Photograph 4.A- Rear/side of Leather Res Building facing northwest

Photograph 5.A- Front of Meat Process Lab facing south

Photograph 5.B- Side of Meat Process Lab facing southwest

Photograph 6.A- Rear of Service Building facing northwest

Photograph 7.A- Side of Mechanical Service Building facing north

Photograph 7.B- Rear of Mechanical Service Building facing west

Photograph 8.A- View of the sides of the Service and Mechanical Service Buildings facing southeast

Photograph 8.B- View of the parking lots towards the Leather Res Building facing south

Photograph 9.A- View of Cresheim Creek facing upstream/northeast

Photograph 9.B- View of Cresheim Creek facing downstream/southwest

Photograph 10.A- View at southeast corner of property facing northeast

Photograph 11.A- View from East Lane facing northeast

Photograph 11.B- View from East Lane facing east

Photograph 12.A- View from bridge near Meat Processing Lab Building facing downstream/south

Photograph 12.B- View from bridge near Meat Processing Lab Building facing upstream/north

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ___/___
DATE RECEIVED: 11/20/18	DATE DUE: 12/19/18
ER NUMBER: 2019-03777-091-A	HRSF: ___

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (●) YES ( ) NO OR ( ) This is additional information for ER Number:

Project Name	USDA Wyndmoor Creek Bed & Lower Road Repairs	County	Montgomery	Municipality	Springfield Township
Project Address	600 E Mermaid Lane	City/State/ Zip	Wyndmoor	PA	19038

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name	Beth Uhler	Phone	(610) 705-4500
Company	CEDARVILLE Engineering Group, LLC	Fax	(610) 705-4900
Street/PO Box	159 E. High Street	Email	buhler@cedarvilleeng.com
City/State/Zip	Pottstown/PA/19464		

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☑ Federal property ☐ State property ☐ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.	Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
	Federal	U.S. Department of Agriculture	Property owner
	State & Federal	PA DEP/USACE 105/404 Permitting	Not yet submitted
	State & Federal	NPDES Permit for Construction	No yet submitted

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☐ Construction ☐ Demolition ☑ Rehabilitation ☐ Disposition

Total acres of project area: 14 Total acres of earth disturbance: Maximum of 14 acres, exact amount unknown

Are there any buildings or structures within the project area? (●) Yes ( ) No Approximate age of buildings: 79 years

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts	n/a
	( )	(●)	( )		

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☒ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: Barbara C. Gedeice **DATE:** 11/30/18

APPENDIX B
Wetland Delineation Report

WETLAND DELINEATION REPORT

USDA Wyndmoor Creek Bed and Lower Road Repairs
600 East Mermaid Lane, Wyndmoor, PA 19038
November 15, 2018

ON BEHALF OF:

STV Incorporated
Shamarukh N. Billah, P.E.,
Site-Civil Engineering Manager
205 West Welsh Drive
Douglassville, PA 19518
610.385.8326
shamarukh.billah@stvinc.com

PREPARED FOR:

USDA
600 East Mermaid Lane
Wyndmoor, PA 19038
215.233.6595

PREPARED BY:

CEDARVILLE Engineering Group, LLC
Beth Uhler, Environmental Project Manager
159 E. High Street
Pottstown, PA 19464
610.705.4500
buhler@cedarvilleeng.com

Table of Contents

1.0 INTRODUCTION 2
2.0 METHODOLOGY 2
3.0 MAPPED RESOURCES 3
3.1 USGS 7.5-minute Topographic Quadrangle 3
3.2 Digital Aerial Imagery 3
3.3 Soil Survey 3
3.4 National Wetland Inventory (NWI) 3
4.0 SITE INVESTIGATION 4
4.1 Plant Communities 4
4.1.1 Maintained Lawn 4
4.1.2 Upland Forest 4
4.1.3 Upland Meadow-Scrub/Shrub 4
4.2 Wetlands 4
4.3 Watercourses and Waterbodies 4
5.0 RESULTS AND CONCLUSIONS 5
6.0 REFERENCES 6
6.1 Method 6
6.2 Plants 6
6.3 Soil 6

Appendices:

Appendix A- USGS Location Map

Appendix B- Data Sheets

Appendix C- Photographs

Appendix D- Soil Unit Description

Appendix E- Natural Resources Map

Appendix F- Wetland Plan

1.0 INTRODUCTION

CEDARVILLE Engineering Group, LLC (CEG) has performed a wetland delineation on behalf of the United States Department of Agriculture (USDA) for the above referenced site. The area of investigation (AOI) is located at 600 E. Mermaid Lane in Springfield Township, Montgomery County, Pennsylvania and consisted of 14-acres within and adjacent to the 31.76-acre property.

CEG conducted the wetland delineation on October 25, 2018. The results of the investigation are outlined below. Preliminary desktop site investigations revealed a low potential for regulated wetlands to exist on or near the site.

2.0 METHODOLOGY

CEG completed the wetland delineation according to the guidance outlined in the *Corps of Engineers Wetlands Delineation Manual* (Department of the Army 1987) and the *Regional Supplement: Eastern Mountains and Piedmont Region* (USACE 2012). The 1987 Manual and the Regional Supplement are recognized by the U.S. Army Corps of Engineers (USACE) as the official method for identifying wetlands and delineating their boundaries. In order to make a positive wetland determination, indicators of three (3) parameters are required (under normal environmental conditions): hydrophytic vegetation, wetland hydrology, and hydric soils.

The routine determination method involves identifying and characterizing each plant community on-site and determining whether hydrophytic vegetation is present. If it is determined that hydrophytic vegetation is not present, the area is not considered a wetland. If it is determined that hydrophytic vegetation is present, the area is then assessed for indicators of wetland hydrology and hydric soils. Transects were established and a sample plot was conducted within each plant community along the transect in order to make a wetland determination, typically resulting in pairs of sample plots on either side of the delineated wetland/upland boundary.

Vegetation within each plant community on the site was tested for three hydrophytic vegetation indicators: the rapid test, the dominance test, and the prevalence index test. If the vegetation at a sample plot does not pass the rapid test, then the dominance test must be performed. If the vegetation at the sample plot does not pass the dominance test, then the prevalence index test must be initiated. If the vegetation passes any of these tests, then it is determined that hydrophytic vegetation is present. Under normal circumstances, if the vegetation does not pass any of these tests, then hydrophytic vegetation is not present. For the dominance test and prevalence index test, plant species at the sample plot and documented by percentage of absolute cover in four strata: tree (30-ft radius plot), sapling/shrub (15-ft radius plot), herbaceous (5-ft radius plot), and woody vine (30-ft radius plot).

Soils and hydrology were examined at each sample plot location using a 20-inch drain spade shovel. The holes were excavated to a depth of 20+ inches depending on conditions at the sample plot. Layers in the soil profile were described by depth, color of the matrix and any redoximorphic features using the *Munsell Soil Color Charts* (Gretag Macbeth (revised) 2000), texture, and any other applicable characteristics. The soil profile was then compared with the hydric soil indicators listed in the Regional Supplement based on soil texture for any applicable positive indicators. Hydrology was evaluated by measuring the depth from soil surface to free water and saturated soil in the excavated pit, as well as by noting additional wetland hydrology indicators as specified in the Regional Supplement.

No wetlands were observed within the area of investigation during this delineation. Top of bank/anticipated jurisdictional ordinary high-water mark (OHW) of Waters of the U.S./Commonwealth on the site were identified and marked with pink survey flagging with identification letter and number on each flag. The flags were located by CEG's professional land surveyor. A plan illustrating the locations of the regulatory boundary is located in Appendix F.

3.0 MAPPED RESOURCES

3.1 USGS 7.5-minute Topographic Quadrangle

The AOI appears on the Germantown, PA U.S. Geological Survey (USGS) 7.5-minute quadrangle map (Latitude 40° 04' 41" N and Longitude 75° 11' 04" W) at approximately 360 feet above mean sea elevation. The topographic map displays a pond with contours slightly indicative of a channel downslope of it, but no mapped stream. There is, however, a defined stream flowing from the pond in a southwesterly direction known as Cresheim Creek. Cresheim Creek appears as a mapped stream further downstream and offsite to the southwest, eventually flowing into Wissahickon Creek, then into the Schuylkill River, and ultimately the Delaware River. According to Chapter 93 of the Pennsylvania Code, Cresheim Creek has a Designated Use of Trout Stocked Fishery (TSF).

Refer to the USGS Map in Appendix A for additional information.

3.2 Digital Aerial Imagery

Digital aerial imagery base mapping was obtained through ArcPro 2.2.3 and reviewed. According to the aerial imagery, the AOI consists of forest, open space/maintained lawn, and meadow/field. A pond is visible northeast of the AOI. A channel is visible south and southeast of the pond within a wood line.

Refer to the Natural Resources Map in Appendix E for the aerial imagery.

3.3 Soil Survey

USDA-Natural Resources Conservation Service (NRCS) soil survey mapping displays one (1) map unit within the AOI: Urban land-Udorthents, schist and gneiss complex, 0 to 8 percent slopes (UugB). UugB is not listed by the NRCS as hydric or containing minor inclusions of hydric components. The map unit is described below in more detail.

The Urban land series comprises approximately 80 percent of the UugB map unit. The Urban land series consists of poorly drained soils with pavement, buildings and other artificially covered areas as parent materials and is typically located on hills. The depth to a restrictive feature is approximately 10 to 99 inches to lithic bedrock. The depth to water table is about 60 inches.

The Udorthents, Schist and Gneiss series comprises approximately 15 percent of the UugB map unit. The Udorthents, Schist and Gneiss series consists of poorly drained soils with graded areas of schist and/or gneiss as parent materials and is typically located on hills. The depth to a restrictive feature is approximately 20 to 70 inches to paralithic bedrock. The depth to water table is about 60 inches.

Minor components comprise approximately 5 percent of the UugB map unit. These components are typically found on hillslopes, ridges, and/or depressions.

Refer to the Natural Resources Map in Appendix E for soil mapping and Appendix D for the soil unit description.

3.4 National Wetland Inventory (NWI)

U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) wetland mapping does not display any wetlands within the AOI. One wetland is located adjacent to the AOI to the northeast, and coincides with the pond.

This wetland is characterized by the USFWS as a palustrine, unconsolidated bottom, semi-permanently flooded, diked/impounded (PUBFh) wetland.

Refer to the Natural Resources Map in Appendix E for NWI mapping.

4.0 SITE INVESTIGATION

4.1 Plant Communities

The overall property is partially developed, consisting of an approximately 0.5-acre pond, forest, open space, and successional meadow. A perennial stream, Cresheim Creek, flows from the pond in a southwesterly direction within the AOI just outside the southern property boundary.

Three (3) main types of plant communities occur within the site and have been categorized as: maintained lawn, upland forest, and upland meadow-scrub/shrub. These general plan communities are briefly described in the following paragraphs. Sample plots were conducted in each of these plant communities.

Refer to the Data Sheets in Appendix B and Site Photographs in Appendix C for additional details.

4.1.1 Maintained Lawn

The majority of the northwest half of the AOI consists of buildings, asphalt drives, parking areas, and maintained lawn. The dominant species within this plant community consisted of *Poa pratensis* (Kentucky bluegrass, FACU).

4.1.2 Upland Forest

Upland forest was located in the north and eastern edges of the site. Dominant species within this plant community consisted of *Carya cordiformis* (Bitternut hickory, FACU), *Prunus serotine* (Black cherry, FACU), *Robinia pseudoacacia* (Black locust, FACU), and *Poa pratensis* (Kentucky bluegrass, FACU).

4.1.3 Upland Meadow-Scrub/Shrub

Upland meadow-scrub/shrub was located primarily along the eastern edge of the site. Dominant species within this plant community consisted of *Fallopia japonica* (Japanese knotweed, FACU), and *Ampelopsis brevipedunculata* (Porcelain berry, UPL).

4.2 Wetlands

No wetlands were observed within the area of investigation.

4.3 Watercourses and Waterbodies

One perennial watercourse was identified within the area of investigation as Cresheim Creek and Waters of the United States/Commonwealth. The stream originates from the southern end of the pond as a channel flowing in a southwesterly direction through the AOI just outside of the southern property boundary. The channel is entrenched and highly eroded. The stream was identified with Flags A-1 to A-53 and B-1 to B-56d.

5.0 RESULTS AND CONCLUSIONS

One perennial watercourse was identified on the site in the area of investigation. Flags have been placed in the field by CEG and located by CEG's professional land surveyor. The location of this watercourse is displayed on the Natural Resources Map in Appendix E and Site Plan in Appendix F.

CEG has performed this delineation based on current regulations and the past experience with regulatory agencies. The Pennsylvania Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers (USACE) have regulatory jurisdiction over these features.

6.0 REFERENCES

The following list of publications was consulted while conducting the wetland delineation and/or during the preparation of this wetland delineation report.

6.1 Method

Department of the Army. 1987. Corps of Engineers Wetland Delineation Manual. Waterways ExperimentStation, Corps of Engineers, Vicksburg, Mississippi. Technical Report Y-87-1.

U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. USACE, Research & Development Station. Vicksburg, Mississippi. ERDC/EL TR-10-9.

U.S. Department of Agriculture (USDA) - U.S. Fish and Wildlife Service (USFWS). 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Washington, D.C., FWS/OBS-79/31.

6.2 Plants

Brown, Lauren. 1979. Grasses: An Identification Guide. Houghton Mifflin Company, New York, New York.

Cobb, Boughton. 1963. A Field Guide to Ferns. The Peterson Field Guide Series. Houghton Mifflin Company, Boston, Massachusetts.

Lichvar, Robert W. and Kartesz, John T. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Boston/New York/Toronto/London.

Rhoads, Ann Fowler and Block, Timothy A. 2007. Plants of Pennsylvania. 2nd Edition. University of Pennsylvania Press, Philadelphia, Pennsylvania.

Symonds, George W.D. 1963. The Shrub Identification Book. HarperCollins Publishers, Inc., New York, New York.

USDA, NRCS. 2018. Plants Database. http://plants.usda.gov.

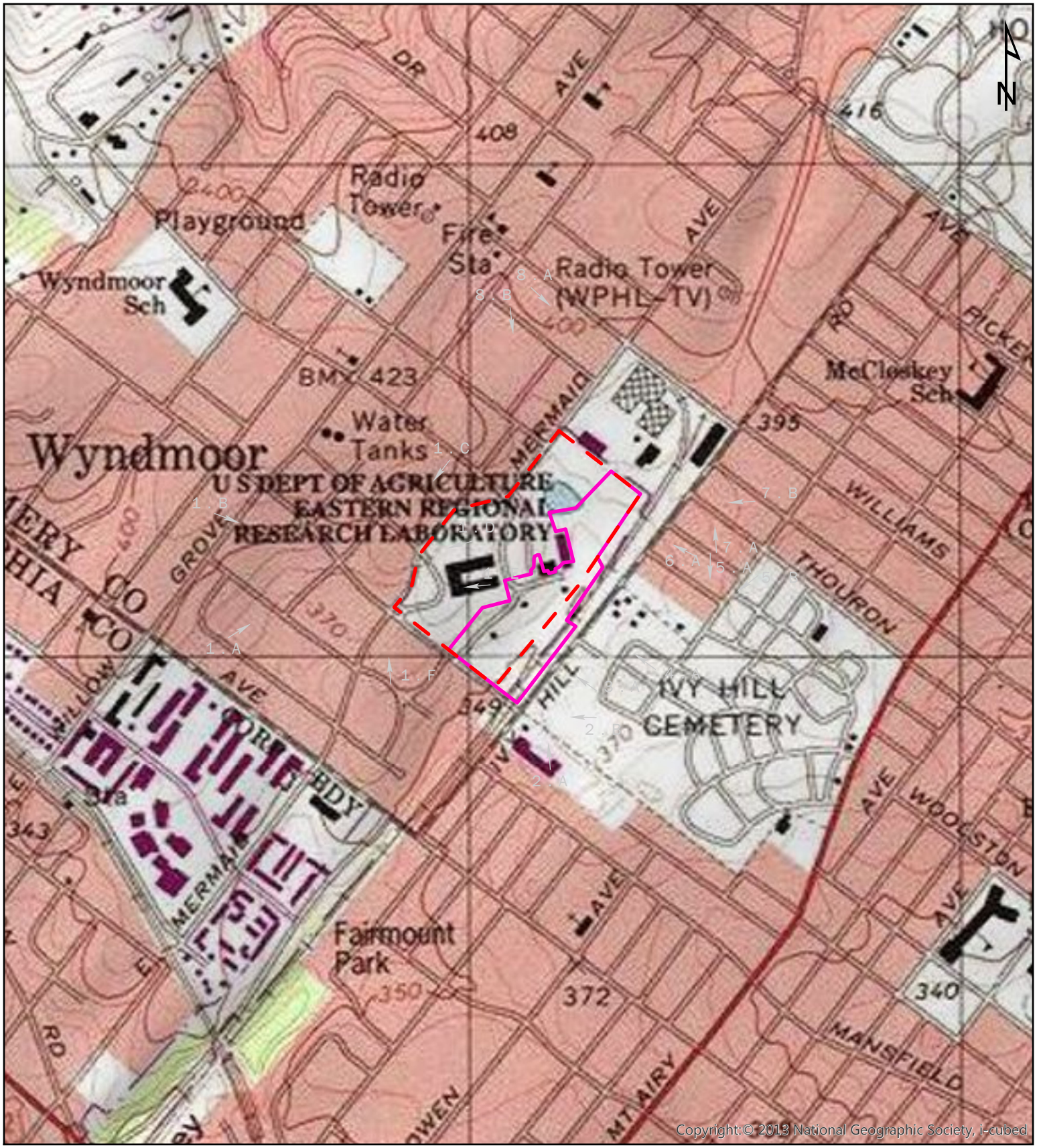
6.3 Soil

Munsell Soil Color Charts. 2000. Munsell Color, Baltimore, Maryland.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. WebSoil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed: 09/17/2014.

APPENDIX A

USGS Map



CEG CEDARVILLE

DRAWN BY: AR

USDA Wyndmoor Creek Bed and Lower Road Repairs

Topographic Location Map

Springfield Township, Montgomery County, PA

0 375 750 1,500 2,250 Feet

11/13/2018

Legend

Project Parcel

Area of Investigation

NOTE: Features on map are approximate.

APPENDIX B

Data Sheets

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Wyndmoor USDA - Sample Plot 1 City/County: Montgomery Sampling Date: 10/25/18

Applicant/Owner: State: PA Sampling Point: 1

Investigator(s): Beth Uhler Section, Township, Range: Springfield Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%):

Subregion (LRR or MLRA): 148 Lat: 40.078416 Long: -75.18414 Datum: NAD 83

Soil Map Unit Name: UugB NWI classification: Upland Forest

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
Sample plot located on the eastern side of the stream, in the southeastern portion of the site.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ___	No ✓	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of wetland hydrology.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya cordiformis	30	Y	FACU
2. Prunus serotina	20	Y	FACU
3. Robinia pseudoacacia	15	Y	FACU
4.			
5.			
6.			
7.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5')			
1. Poa pratensis	45	Y	FACU
2. Microstegium vimineum	20	N	FAC
3. Bidens frondosa	8	N	FACW
4. Liriope muscari	8	N	UPL
5. Vitis SP	5	N	UPL
6. Violet SP	5	N	UPL
7. Fragaria vesca	5	N	FACU
8. Polygonum pensylvanicum	5	N	FACW
9. Alliaria petiolata	2	N	FACU
10.			
11.			
	103 = Total Cover		
50% of total cover: 51.5	20% of total cover: 20.6		

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	13	x 2 =	26
FAC species	20	x 3 =	60
FACU species	117	x 4 =	468
UPL species	18	x 5 =	90
Column Totals:	12 (A)		47 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

There was no indication of wetland vegetation.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10yr 4/3	100					Silt loam	
8-20	10yr 5/6	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

There was no indicator of wetland soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Wyndmoor USDA - Sample Plot 2 City/County: Montgomery Sampling Date: 10/25/18

Applicant/Owner: State: PA Sampling Point: 2

Investigator(s): Beth Uhler Section, Township, Range: Springfield Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%):

Subregion (LRR or MLRA): 148 Lat: 40.07639 Long: -75.18543 Datum: NAD 83

Soil Map Unit Name: MugB NWI classification: Upland Meadow

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
Sample plot located in the southeastern direction of the pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ___	No ✓	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of wetland hydrology.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5')			
1. Ampelopsis Brevipedunculata	100	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species	100	x 5 = 500
Column Totals:	100 (A)	500 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

There was no indication of wetland vegetation

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10yr 2/1	100					Silt Loam	
1-5	10yr 4/3	100					Sandy Loam	
5-20	7.5yr 5/8	60	10yr 4/3	30	D	M	Silt Loam	
			10yr 2/1	10	D	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

There was no indication of wetland soils.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Windmoor USDA - Sample Plot 3 City/County: Montgomery Sampling Date: 10/25/18

Applicant/Owner: State: PA Sampling Point: 3

Investigator(s): Beth Uhler Section, Township, Range: Springfield Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%):

Subregion (LRR or MLRA): 148 Lat: 40.076277 Long: -75.186964 Datum: NAD83

Soil Map Unit Name: UuqB NWI classification: Upland Meadow

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
Sample plot located in the southern portion of the site near East Lane.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There was no indication of wetland hydrology.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 3

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: _____)			
1. Poa Pratensis	95	Y	FACU
2. Fragaria vesca	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species	105	x 4 = 420
UPL species		x 5 =
Column Totals:	105 (A)	420 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

There was no indicator of wetland vegetation.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 4/3	100					Silt loam	
6-12	10yr 5/6	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

There was no indicator of wetland soil.

APPENDIX C

Photographs

Wetland Report Photographs

USDA Wyndmoor Creek Bed and Lower Road Repairs

Photograph 1- View of Cresheim Creek facing upstream/northeast.

Photograph 2- View of Cresheim Creek facing downstream/southwest.

Photograph 3- View of stone culvert facing downstream/southwest.

Photograph 4- View of a stormwater endwall discharging into Cresheim Creek from the site.

Photograph 5- View of the pond facing north.

Photograph 6- View of the pond's outlet structure discharging facing north.

Photograph 7- View of sample plot 1 facing northeast.

Photograph 8- View of sample plot 1 facing southwest.

Photograph 9- View of sample plot 1 facing west.

Photograph 10- View of sample plot 1 facing north.

Photograph 11- View of sample plot 1 facing east.

Photograph 11- View of sample plot 1 facing northeast.

Photograph 11- View of sample plot 1 facing southwest.

APPENDIX D

Soil Unit Description

Montgomery County, Pennsylvania

UugB—Urban land-Udorthents, schist and gneiss complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtz7
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 80 percent
Udorthents, schist and gneiss, and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Pavement, buildings and other artifically covered areas

Typical profile

C - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Udorthents, Schist And Gneiss

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex

Across-slope shape: Convex, linear
Parent material: Graded areas of schist and/or gneiss

Typical profile

Ap - 0 to 6 inches: loam
C - 6 to 40 inches: silty clay loam
R - 40 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 70 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 60 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Glenelg

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Edgemont

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Glenville

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear

Hydric soil rating: No

Baile

Percent of map unit: 1 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Gladstone

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

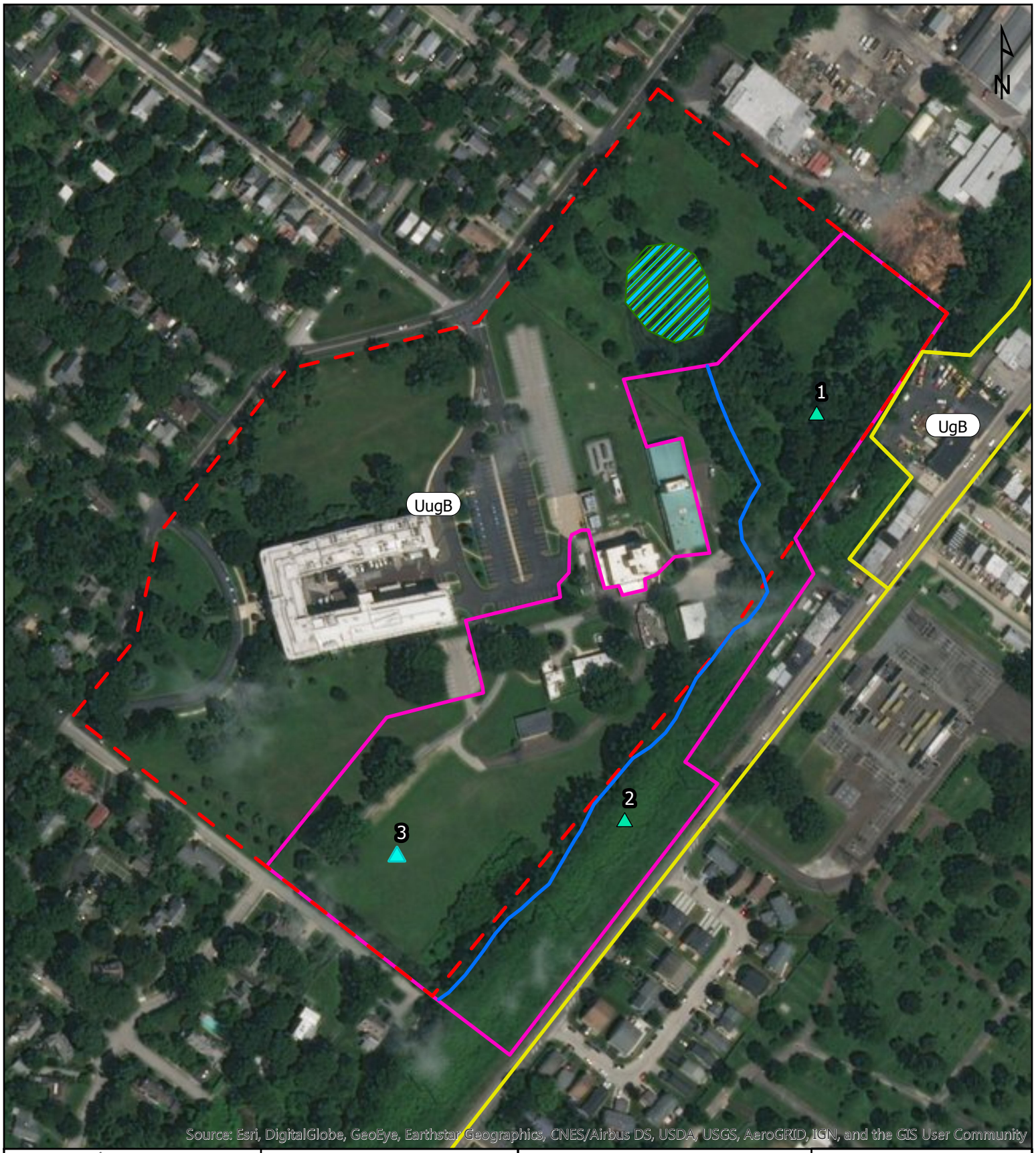
Data Source Information

Soil Survey Area: Montgomery County, Pennsylvania
Survey Area Data: Version 13, Sep 19, 2018

Soil Survey Area: Philadelphia County, Pennsylvania
Survey Area Data: Version 14, Sep 19, 2018

APPENDIX E

Natural Resources Map



CEG CEDARVILLE

DRAWN BY: AR

USDA Wyndmoor Creek Bed and Lower Road Repairs

Natural Resources Map

Springfield Township, Montgomery County, PA

0 175 350 700 Feet

11/13/2018

LEGEND

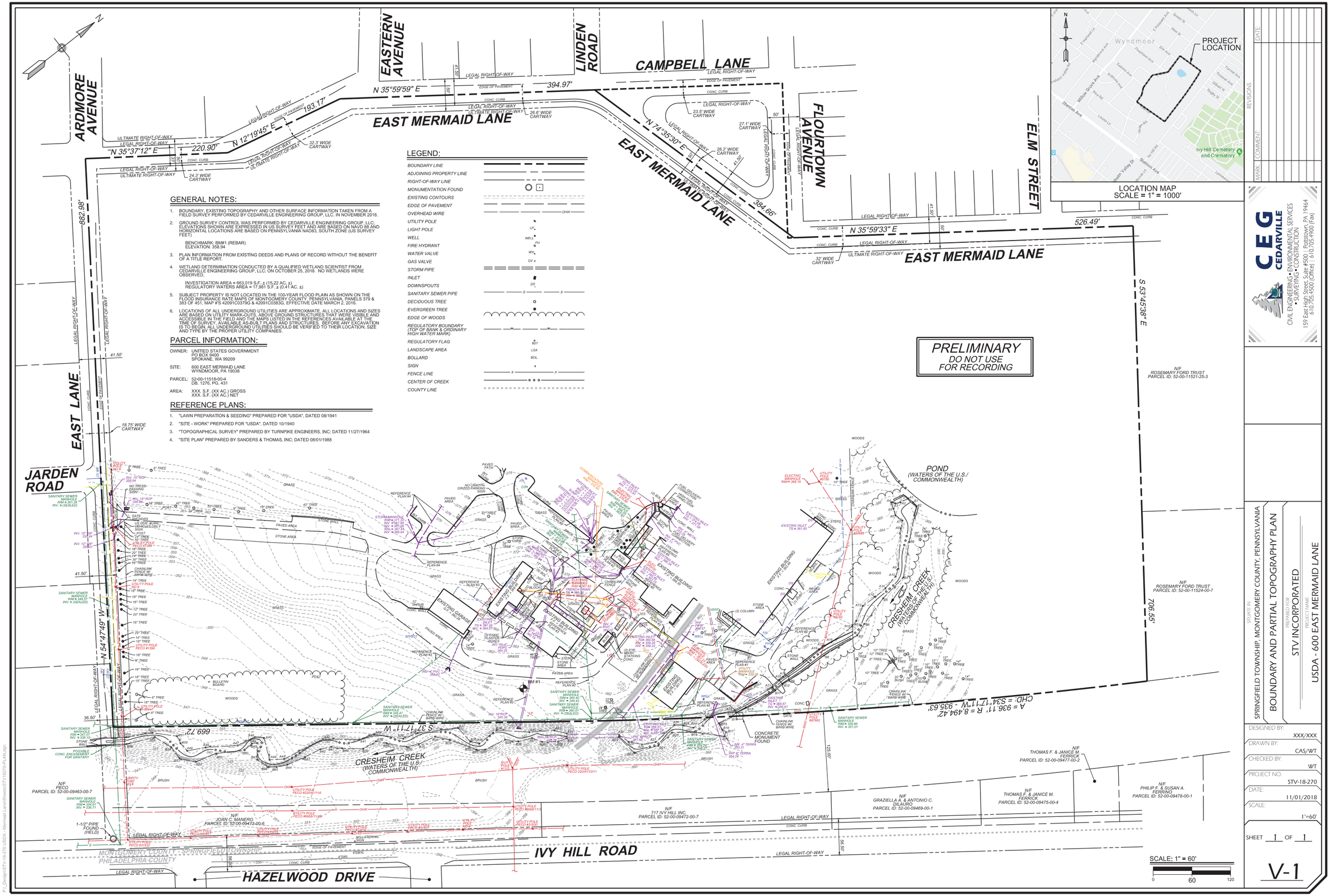
- SAMPLE POINTS
- CRESHEIM CREEK
- SOILS
- NWI WETLANDS
- PROJECT PARCEL
- AREA OF INVESTIGATION

NOTE:
1. Features on map are approximate.
2. Site visit conducted 10/25/18.
3. Area of Investigation is approximately 14 acres.
4. Cresheim Creek was drawn in by CEG as approximate.
5. Soils are provided by USDA NRCS Web Soil Survey SSURGO Database.
6. NWI Wetlands are provided by USFWS NWI.
7. The entire map view is located within FEMA Zone X.

APPENDIX F

Wetland Plan

("Boundary and Partial Topography Plan" 11/1/2018)



LOCATION MAP
SCALE = 1" = 1000'

LEGEND:

- BOUNDARY LINE
- ADJOINING PROPERTY LINE
- RIGHT-OF-WAY LINE
- MONUMENTATION FOUND
- EXISTING CONTOURS
- EDGE OF PAVEMENT
- OVERHEAD WIRE
- UTILITY POLE
- LIGHT POLE
- WELL
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- STORM PIPE
- INLET
- DOWNSPOUTS
- SANITARY SEWER PIPE
- DECIDUOUS TREE
- EVERGREEN TREE
- EDGE OF WOODS
- REGULATORY BOUNDARY (TOP OF BANK & ORDINARY HIGH WATER MARK)
- REGULATORY FLAG
- LANDSCAPE AREA
- BOLLARD
- SIGN
- FENCE LINE
- CENTER OF CREEK
- COUNTY LINE

GENERAL NOTES:

1. BOUNDARY, EXISTING TOPOGRAPHY AND OTHER SURFACE INFORMATION TAKEN FROM A FIELD SURVEY PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC. IN NOVEMBER 2018.
2. GROUND SURVEY CONTROL WAS PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC; ELEVATIONS SHOWN ARE EXPRESSED IN US SURVEY FEET AND ARE BASED ON NAVD 88 AND HORIZONTAL LOCATIONS ARE BASED ON PENNSYLVANIA NAD83, SOUTH ZONE (US SURVEY FEET)

   BENCHMARK: BM#1 (REBAR)
   ELEVATION: 358.94
3. PLAN INFORMATION FROM EXISTING DEEDS AND PLANS OF RECORD WITHOUT THE BENEFIT OF A TITLE REPORT.
4. WETLAND DETERMINATION CONDUCTED BY A QUALIFIED WETLAND SCIENTIST FROM CEDARVILLE ENGINEERING GROUP, LLC; ON OCTOBER 25, 2018. NO WETLANDS WERE OBSERVED.

   INVESTIGATION AREA = 663,019 S.F. ± (15.22 AC. ±)
   REGULATORY WATERS AREA = 17,981 S.F. ± (0.41 AC. ±)
5. SUBJECT PROPERTY IS NOT LOCATED IN THE 100-YEAR FLOOD PLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAPS OF MONTGOMERY COUNTY, PENNSYLVANIA, PANELS 379 & 383 OF 451, MAP #'S 42091C0379G & 42091C0383G, EFFECTIVE DATE MARCH 2, 2016.
6. LOCATIONS OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE AND ACCESSIBLE IN THE FIELD AND THE MAPS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF SURVEY. AVAILABLE AS-BUILT PLANS AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.

PARCEL INFORMATION:

OWNER: UNITIED STATES GOVERNMENT
PO BOX 9400
SPOKANE, WA 99209

SITE: 600 EAST MERMAID LANE
WYNDMOOR, PA 19038

PARCEL: 52-00-11518-00-4
DB. 1276, PG. 431

AREA: XXX. S.F. (XX AC.) GROSS
XXX. S.F. (XX AC.) NET

REFERENCE PLANS:

1. "LAWN PREPARATION & SEEDING" PREPARED FOR "USDA", DATED 08/1941
2. "SITE - WORK" PREPARED FOR "USDA", DATED 10/1940
3. "TOPOGRAPHICAL SURVEY" PREPARED BY TURNPIKE ENGINEERS, INC; DATED 11/27/1964
4. "SITE PLAN" PREPARED BY SANDERS & THOMAS, INC; DATED 08/01/1988

MARK	COMMENT	REVISIONS	DATE

CEG
CEDARVILLE
CIVIL ENGINEERING • ENVIROMENTAL SERVICES
• SURVEYING • CONSTRUCTION
159 East High Street, Suite #500 | Pottstown, PA 19464
610.705.1500 [Office] | 610.705.1900 [Fax]

LOCATED IN
SPRINGFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

BOUNDARY AND PARTIAL TOPOGRAPHY PLAN

PREPARED FOR
STV INCORPORATED

PROJECT NAME
USDA - 600 EAST MERMAID LANE

DESIGNED BY:	XXX/XXX
DRAWN BY:	CAS/WT
CHECKED BY:	WT
PROJECT NO.	STV-18-270
DATE:	11/01/2018
SCALE:	1"=60'

SHEET 1 OF 1

V-1

P:_Design\STV-18-270 USDA - Mermaid Lane\Sheets\STV18270-PLAN.dgn

APPENDIX C
Photograph Log

Creek Bed and Lower Road Repairs at the Eastern Regional Research Center (ERRC)

PHOTOGRAPH LOG

PHOTOGRAPH 1

Looking northeast from East Lane at the ERRC facility

PHOTOGRAPH 2

Looking northwest towards the Main Laboratory Building and Lot 5

Creek Bed and Lower Road Repairs at the Eastern Regional Research Center (ERRC)

PHOTOGRAPH LOG

PHOTOGRAPH 3
Looking south at pavement behind the Mechanical Services Building at pavement in need of repair

PHOTOGRAPH 4
Looking northeast at Cresheim Creek at the intersection of East Lane

Creek Bed and Lower Road Repairs at the Eastern Regional Research Center (ERRC)

PHOTOGRAPH LOG

PHOTOGRAPH 5

Looking north at Cresheim Creek in the vicinity of the Mechanical Services Building

PHOTOGRAPH 6

Sediment built up along the ERRC property fence in the vicinity of the Meat Process Lab

PHOTOGRAPH 7

Old railroad tracks crossing over Cresheim Creek in the vicinity of the Meat Process Lab

PHOTOGRAPH 8

Photo of pond located in Mermaid Park located northeast of the ERRC facility

PHOTOGRAPH 9

Photo of dam from the pond in Mermaid Park to Cresheim Creek

PHOTOGRAPH 10

Dumpsters located in the vicinity of the Mechanical Services Building

PHOTOGRAPH 11

Chemical storage

PHOTOGRAPH 12

Hazardous Ops Building and associated bollards

PHOTOGRAPH 13
Propane tank located adjacent to the Meat Process Lab

PHOTOGRAPH 14
Stormwater manhole located adjacent to the ERRC property fence; Cresheim Creek is located northeast of the fence

APENDIX D
Finding of No Significant Impact

FINDING OF NO SIGNIFICANT IMPACT

CREEK BED AND LOWER ROAD REPAIRS
UNITED STATES DEPARTMENT OF AGRICULTURE, AGRICULTURAL RESEARCH SERVICE
EASTERN REGIONAL RESEARCH CENTER
WYNDMOOR, PENNSYLVANIA

Description of the Proposed Action

The United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Eastern Business Service Center (EBSC) is proposing to conduct road repairs and creek stabilization at their Eastern Regional Research Center (ERRC) in Wyndmoor, Springfield Township, Montgomery County, Pennsylvania. The ERRC is a laboratory research center, established by an Act of Congress in 1938. The ERRC is home to the Nation's leading scientists and engineers in agriculture, solving problems facing the U.S. today and tomorrow with fundamental, applied, and developmental research on agricultural commodities including milk, meat, poultry, hides, leather, wool, fats, oils, rendered protein, grains, fruits, vegetables, energy crops, and juices. The ERRC is tasked with developing new knowledge and technology that will ensure an abundance of high quality agricultural commodities and products at reasonable prices to meet the increasing needs and to provide a continued improvement in the standard of living of all Americans.

An accompanying National Environmental Policy Act (NEPA) Environmental Assessment (EA) was prepared to evaluate site conditions in the project area. The EA presents evidence that the Proposed Actions will be in compliance with all applicable federal and state regulatory agency requirements and that no environmental impact that cannot be mitigated is proposed, thereby resulting in this Finding of No Significant Impact (FONSI).

Need for the Action

In 2013, STV performed a preliminary investigation on behalf of the ERRC of a section of Cresheim Creek running from the culvert at Mermaid Lane to East Lane. At the time of the preliminary investigations performed by STV, the team found evidence of accelerated stream bank erosion occurring along the banks of the creek. Other observations noted were debris/large obstructions located within the creek bed, including tires, fallen trees and large rock boulders, steep slopes along the creek bank with no vegetation, exposed tree roots along the banks, lack of outfall protective measures for storm sewer pipes discharging to the creek, lack of riparian buffers along sections of the creek, toe erosion, undercutting and vertical banks. Stream surveys conducted in November 2018 indicated that conditions of the creek have continued to deteriorate, due to further urbanization and more intense storms and runoff events.

In addition to restoration of the creek, sections of the Lower Road driveways, and paved surfaces located along the southeastern border of the property, also require repairs. Also, based on informal discussions USDA has had with the Philadelphia Water Department and Friends of the Wissahickon, a non-profit organization, it is desired by USDA to incorporate a walkable path for public use along the outside of the ERRC fence line.

Alternatives Considered and Environmental Consequences

Under NEPA, EA's may evaluate only one build alternative for projects that are not complex or controversial. Therefore, the EA evaluated only the Proposed Action for each project, and the No Build Alternative.

Under the No Build Alternative for the Stream Restoration Project, restoration of Cresheim Creek would not occur, allowing continued degradation of the stream. Streambank erosion and undercutting would continue, obstructions would not be removed, outfall protection would not be installed, and the creek would continue to lack riparian buffers.

Under the No Build Alternative for the Road Improvements Project, no road improvements would occur, resulting in the conditioned use of deteriorated roadways.

Under the No Build Alternative for the Walking Path Project, no walking path would be constructed along Cresheim Creek.

All elements of the Proposed Actions were evaluated in the EA in order to identify expected or potential environmental effects. As shown in Tables 1-3, no significant adverse environmental impacts were identified, nor do the Proposed Actions conflict with the land use or policies by the USDA.

Table 1 - Alternatives Analysis Matrix
Stream Restoration Project

Environmental Component	No Build Alternative	Build Alternative
Soils, Geology and Topography	No Impact	Minor or Negligible
Water Resources	No Impact	The Build Alternative would result in a positive impact to water quality in the portion of Cresheim Creek being stabilized and downstream surface waters, as well as improving the aesthetic properties of the creek.
Biological Resources	No Impact	Stream enhancements and planting of a native riparian corridor will ultimately improve habitat for fish and wildlife.
Cultural Resources	No Impact	No Impact
Air Quality	No Impact	Negligible Impact During Construction
Noise	No Impact	Minor or Negligible During Construction
Infrastructure	No Impact	The stream restoration plan will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction.
Solid Waste and Hazardous Materials	No Impact	Further investigation of fill material along the banks of Cresheim Creek should be conducted if it will be disturbed during construction activities.
Recreation	No Impact	No Impact
Environmental Justice	No Impact	No Impact

Table 2 - Alternatives Analysis Matrix
Road Improvements Project

Environmental Component	No Build Alternative	Build Alternative
Soils, Geology and Topography	No Impact	Minor or Negligible
Water Resources	No Impact	No Impact
Biological Resources	No Impact	Negligible Impact During Construction
Cultural Resources	No Impact	No Impact
Air Quality	No Impact	Negligible Impact During Construction
Noise	No Impact	Minor or Negligible During Construction
Infrastructure	No Impact	The road improvement plans will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction. Traffic patterns within the ERRC will be temporarily impacted during repaving activities. However, construction will be conducted in phases to minimize impacts.
Solid Waste and Hazardous Materials	No Impact	Minor Impact which can be mitigated by proper handling and disposal
Recreation	No Impact	No Impact
Environmental Justice	No Impact	No Impact

Table 3 - Alternatives Analysis Matrix
Walking Path

Environmental Component	No Build Alternative	Build Alternative
Soils, Geology and Topography	No Impact	Minor or Negligible
Water Resources	No Impact	No Impact
Biological Resources	No Impact	Negligible Impact During Construction
Cultural Resources	No Impact	No Impact
Air Quality	No Impact	Negligible Impact During Construction
Noise	No Impact	Minor or Negligible During Construction
Infrastructure	No Impact	The walking path design will incorporate the findings of the utility survey in order to avoid conflicts with utilities during construction.
Solid Waste and Hazardous Materials	No Impact	Minor Impact which can be mitigated by proper handling and disposal
Recreation	No Impact	Construction of a walking path along Cresheim Creek would provide direct access from residences along East Lane and points south, to Mermaid Park.
Environmental Justice	No Impact	No Impact

Conclusion

After careful and thorough consideration of the facts contained herein and in the accompanying NEPA EA, the undersigned finds that the proposed Federal Action is consistent with existing national environmental policies and objectives as set forth in Section 101(1) of the National Environmental Policy Act of 1969 and it will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

APPROVED:_____**DATE**:_____

DISAPPROVED:_____**DATE:**_____